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Mortality of the Provident Classes in this Country and on the Continent.
By F. G. P. NEISON, Esq.

[Read before the Statistical Section of the British Association at Edinburgh,
5th August, 1850.]

IN the present Contribution to "Vital Statistics," it is intended to exhibit the rate of Mortality which prevails among the Wealthy, the Middle, and the Provident Classes of this Country and of the Continent.

England and Wales are the only portions of the United Kingdom in which public mortuary registers are kept, and, consequently, in which the rate of mortality of the whole population can be accurately measured. In the other divisions of the kingdom, the rate of mortality is known only inferentially, and not by direct observation, and nowhere do the public records afford the means by which to determine the duration of life in particular classes of the community. There are, however, other sources from which much information may be derived.

In the year 1843, a report was made, by a committee of actuaries, on the mortality among the persons assured by seventeen of the principal assurance companies of this country, and these persons may be fairly considered to belong to the middle and upper classes of society; and at various periods since the year 1824, inquiries have been made into the rate of mortality among the members of friendly societies, including the more industrious and prudent of the working and the labouring portion of the people. One important result derived from these investigations is, that while the mortuary registers show a certain rate of mortality for the whole population of England and Wales, the evidence furnished by the facts constituting the other body of information clearly proves the mortality of the middle and upper classes to be above, and that of the industrious working classes to be below, the ratio for the country generally. This conclusion forms an important consideration in all sanitary inquiries, and, by an obvious inference, determines in what class or section of the people the excessive rate of mortality prevails. For other reasons, however, it is a subject of first importance to understand clearly the rate of mortality among the middle and upper classes.

The *Journal of the Statistical Society* contains a valuable body of evidence on this question, which goes to prove, that among the peerage, the country gentry, and the professional classes, the rate of mortality is higher than that of the country generally, and, as already remarked, the report by the committee of actuaries shows, that among the lives assured by the public companies of this country, the mortality is also not less than that of the general population.

In support of the results derived from this latter body of facts, there is abundant collateral proof; but it has been thought desirable to test them, if possible, by facts originating in quite an independent source, and, with this view, an analysis has been made of the experience of some of the life assurance offices in Germany, one of which, the Gotha Society, the largest in the world, had, in the 21 years ending January 1850, assured 22,063 lives, and there were, in the beginning of this year, subsisting assurances on no less than 15,471 of these lives.

From the following tables, it will be seen that a very elaborate investigation has been made of the facts presented, and that some of the combinations formed are of a novel character in vital statistics; but a very few observations will, however, suffice to bring the results under the criticism of the Section, as the various tables and abstracts sufficiently explain themselves. It should be stated that the information is collected from the very admirable annual reports of the Gotha Life Office, and that wherever tabulated results were furnished in these documents, their accuracy has been tested by a reconstruction of the figures from the original abstracts.

The following table exhibits the rate of mortality in this Society for each of the eight years 1842-49, and the difference for each quinquennial term of life between the actual rate of mortality and that expected according to the data on which the rates or scale of premiums in use by the Society are based, namely, a rate of mortality assimilating closely to the "Equitable Experience."

TABLE I.

Ages.	1842.			1843.			1844.			1845.		
	Persons	Deaths	Expected.	Persons	Deaths	Expected.	Persons	Deaths	Expected.	Persons	Deaths	Expected.
15-25 ...	114	...	0.72	116	...	0.72	119	1	0.79	116	...	0.76
26-30 ...	491	4	4.01	498	4	4.06	513	3	4.29	553	3	4.55
31-35 ...	1,277	7	12.49	1,280	11	12.48	1,355	6	13.09	1,323	9	13.02
36-40 ...	2,180	26	24.41	2,190	19	24.54	2,180	15	24.46	2,185	14	24.72
41-45 ...	2,335	27	28.15	2,505	26	30.04	2,620	18	31.66	2,779	22	33.75
46-50 ...	1,920	28	29.02	2,073	32	31.03	2,246	36	33.66	2,382	40	35.85
51-55 ...	1,513	24	29.82	1,644	33	32.11	1,753	30	34.48	1,865	31	36.86
56-60 ...	1,088	31	28.82	1,162	32	29.25	1,251	24	31.87	1,309	44	33.28
61-65 ...	612	26	20.00	652	18	21.58	713	34	22.96	806	28	26.36
66-70 ...	301	19	13.13	342	21	15.05	376	21	16.73	406	33	18.05
71-85 ...	77	6	5.36	104	7	7.69	143	12	10.82	181	14	13.90
Total ...	11,898	198	193.93	12,572	203	203.55	13,249	200	224.81	13,885	238	241.13

Ages.	1846.			1847.			1848.			1849.		
	Persons	Deaths	Expected.	Persons	Deaths	Expected.	Persons	Deaths	Expected.	Persons	Deaths	Expected.
15-25 ...	116	...	0.72	129	1	0.76	106	...	0.62	93	...	0.60
26-30 ...	569	4	4.71	613	6	4.97	557	3	4.57	559	2	4.67
31-35 ...	1,334	11	13.08	1,381	9	13.53	1,376	17	13.46	1,358	16	13.25
36-40 ...	2,233	27	25.09	2,248	26	25.13	2,182	31	24.69	2,207	22	24.87
41-45 ...	2,551	24	34.53	2,922	29	35.52	2,887	40	35.20	2,822	32	34.34
46-50 ...	2,534	27	36.30	2,726	49	40.94	2,852	38	43.66	2,944	31	44.82
51-55 ...	2,007	29	39.55	2,131	43	42.26	2,217	45	44.20	2,357	34	46.75
56-60 ...	1,373	29	34.99	1,522	44	38.44	1,605	45	40.84	1,713	64	43.42
61-65 ...	883	29	28.83	964	38	31.82	1,053	55	34.79	1,100	56	36.22
66-70 ...	459	30	20.47	473	24	21.36	523	32	23.79	553	46	24.95
71-85 ...	205	19	16.76	252	24	20.80	294	33	24.45	341	34	28.39
Total ...	14,564	229	257.03	15,361	293	275.53	15,652	339	290.27	16,047	337	302.28

An inspection of the preceding table will show, that in four out of the eight years, there has been experienced a greater number of deaths than expected, according to the tables of the Society, namely, in the years 1842, 1847, 1848, and 1849; and, according to the following abstract, it will be seen that the excess of deaths for the whole of the eight years has been 43.47, being about 2.180 per cent. on the expected mortality.

ABSTRACT A.

Mortality during the Years 1842—1849.

Ages.	Number of Persons Assured.	Actual Deaths.	Sum of Actual Deaths.	Expected Deaths.	Sum of Expected Deaths.
15—25.....	909	2	.....	5·7	.....
26—30.....	4,353	29	31	35·9	41·6
31—35.....	10,664	86	117	104·4	146·0
36—40.....	17,605	180	297	197·9	343·9
41—45.....	21,721	218	515	263·2	607·1
46—50.....	19,657	281	796	297·3	904·4
51—55.....	15,487	269	1,065	306·0	1210·4
56—60.....	11,003	313	1,378	278·9	1489·3
61—65.....	6,789	284	1,662	222·6	1711·9
66—70.....	3,433	226	1,888	153·5	1865·4
71—84.....	1,597	149	2,037	128·2	1993·6
	113,218	2,037		1993·6	

It is worthy of remark, at this point of the inquiry, that, under the age of 55, the actual rate of mortality is uniformly less than the expected rate, averaging about 12 per cent. less than the rate calculated upon; but, on the other hand, the actual mortality above the age of 55 exceeds the expected mortality about 24 per cent. A comparison of the columns headed "persons assured," for each of the nine years represented in Table I., with the figures in the fourth column of Table XV, following, will show that the number of persons given in Table I., for each year, is the gross number assured, and not the number exposed to the risk of a whole year's mortality; it would, therefore, lead to a false estimate of the mortality, were it to be measured with reference to the numbers in the columns headed "persons assured;" but this has evidently not been done in the determination of the numbers in the columns headed "expected deaths;" they are derived from the correct number exposed to a whole year's risk of mortality.

It will be observed that the excess of 43 deaths over the expected number in Table I. and Abstract A, preceding, is due chiefly to the years 1848-9, in the former year, the difference being about 49, and in the latter, 35 deaths, the united difference being nearly double that of the gross difference for the eight years under review; it is, therefore, obvious that this result depends on some temporary cause, namely, epidemics prevalent in those years, as will be hereafter seen.

If reference be now made to Table II., which gives the history of the 1285 lives assured in the first year of the Society's existence, it will be found that, at the end of the year 1838, there had been 196 deaths, the policies on the lives of 124 had lapsed, and 965 persons still remained assured, irrespective of all those assuring subsequent to the year 1829. It will be further seen that the actual number of deaths is almost identical with the number expected, according to the data on which the Society's calculations are based, and which corresponds very closely with the rate of mortality observed among assured lives generally in this country. It will be further seen that,

unless at the quinquennial term of life, 56-60, at which the numbers assured are very small, and therefore subject to fluctuation, there is no very important difference between the actual and expected rate of mortality.

TABLE II.

Ages.	Number of Persons Assured in 1829.	Deaths during 1829-1838.				Number of Lives upon which Policies have Lapsed.	Number of Persons subsisting at the end of 1838.
		Expected.	Sum of Expected.	Actual.	Sum of Actual.		
16-25....	19	1.3	....	1	....	4	14
26-30....	85	7.1	8.4	5	6	19	61
31-35....	189	18.7	27.1	15	21	27	147
36-40....	276	32.5	59.6	27	48	18	231
41-45....	254	34.8	94.4	40	88	20	194
46-50....	184	31.9	126.3	32	120	19	133
51-55....	160	35.5	161.8	33	153	12	115
56-60....	97	26.5	188.3	36	189	5	56
61-65....	21	7.7	196.0	7	196	....	14
	1,285	196.0		196		124	965

The following table (III) exhibits the rate of mortality among the members of the Society for the twenty-one years 1829-49; and it will be seen, that while the expected mortality was 3193.83, the actual deaths have been 3,144, falling short of the expected mortality by about 50 deaths, or 1.560 per cent. on the expected mortality. It will also be observed, that in this, as in Abstract A, the actual exceeds the expected mortality by 19.3 per cent. above the age of 55, but is less under that age by 12.7 per cent. A comparison of the facts presented in this table, with those in Table II. and Abstract A, shows, in a remarkable degree, the amount of deterioration which takes place in the health of the assured after the expiring of a few years from the date of admission. In Table III., the actual number of deaths falls short of the number expected by the tables of the Society about 1.560 per cent., but in Abstract A, the actual mortality exceeds the expected by 2.180 per cent. The former body of facts embraces all the members of the Society, not only those originally admitted, but also those recently enrolled; and while it includes the mortality of the older class of members long subsequent to their admission, it also contains the mortality in the early years of admission in the same class, and, at the same time, the mortality of those persons but recently admitted. On the other hand, the latter body of facts (Abstract A), although it contains the mortality of members recently admitted, or those entering the Society subsequent to the year 1841, yet it does not contain the mortality for the older class of members for any of the years preceding 1842; and although, as already remarked, this excess of mortality may be partly due to the epidemics of 1848-9, still it is obvious that the increased mortality is also to some extent owing to the exclusion of the experience of the first fourteen years of the older class of members. That this must be the case, is further evident, from a consideration of the results in Table II., which must be regarded as intermediate

between the two other groups of facts just alluded to, as it is free from the admixture of the recently-admitted members with the older, all having been admitted in the year 1829; and it will be observed, that the actual number of deaths is almost identical with that expected by the tables of the Society; while also, in respect to Table II., it will be observed that there is much greater uniformity in the actual and expected deaths at the different terms of life than in either Abstract A or Table III., and this result is consistent with the exclusion of the new admissions, chiefly taking place at the younger terms of life, in the two other classes of facts.

TABLE III.
Mortality during the Years 1829—1849.

Ages.	Number of Persons Assured.	Actual Deaths.	Sum of Actual Deaths.	Expected Deaths.	Sum of Expected Deaths.
15—25.....	1,931	8	....	12·0	....
26—30.....	9,199	71	79	73·8	85·8
31—35.....	22,490	189	268	214·6	300·4
36—40.....	33,928	304	572	373·1	673·5
41—45.....	37,228	356	928	442·0	1115·5
46—50.....	32,362	440	1,368	481·5	1597·0
51—55.....	25,016	450	1,818	485·9	2082·9
56—60.....	17,618	481	2,299	440·3	2523·2
61—65.....	10,370	412	2,711	334·8	2858·0
66—70.....	4,477	271	2,982	198·6	3056·6
71—84.....	1,734	162	3,144	137·3	3193·9
	196,353	3,144		3193·9	

In order to determine the relation between the actual rate of mortality prevailing among the members of the Gotha Life Society and that of other classes of lives, it is necessary, in the first place, to ascertain the number of persons exposed to the risk of a whole year's mortality at the different terms of life, and this may be easily done by the following formula, in which—

a = the total number of persons entering the Society during the whole 21 years, as given in column 3, Table XV.

b = the total number of persons on whose lives policies have lapsed from other causes than death, during the same period of years, as given in column 5, Table XV.

c = the gross number of persons assured at one time or another during the same 21 years, as set forth in column 2, Table III., for the same terms of life at which members enter or retire from the Society; and, therefore,

$$\frac{a + b}{2} \cdot 100 = \frac{c}{c} = \text{the quantity to be deducted from column 2,}$$

Table III., for the same period of life, in order to determine the gross number exposed to the risk of a whole year's mortality. But this quantity cannot be applied as an average ratio to each term of life, as the admissions and demissions are not uniform over each term or period

of life in the table. Let, therefore, the figures in columns 2 and 7 of Table II. represent the correct ratio of persons entering the Society and also withdrawing, from all causes, death excepted; also let

d = the total of the numbers in columns 2 and 7 for every term of life in Table II.;

e = the sum of the numbers in the two columns 2 and 7 for any given term of life; and

n = the number of the terms of life at which members enter and withdraw; then

$$\lambda x = \lambda e + \lambda \left(\frac{a + b}{2} \cdot 100 \right) \frac{1}{c} \cdot n - \lambda d. \text{ And if}$$

f = the quantity at any particular term of life in Table III.; then will

$f \cdot (100 - x) =$ the number forming the second column of the following table.

TABLE IV.

Ages.	Number exposed to the risk of Mortality for a whole Year.	Number of Deaths that would have happened according to the Mortality of England and Wales. Males.	Sum of the Deaths.	Actual Deaths in the Society.	Sum of Actual Deaths.
15—25.....	1,912	15·6	....	8	....
26—30.....	8,788	87·7	103·3	71	79
31—35.....	20,403	216·9	320·2	189	268
36—40.....	29,642	343·0	663·2	304	572
41—45.....	32,846	433·2	1096·4	366	928
46—50.....	29,540	460·8	1557·2	440	1,368
51—55.....	23,420	453·2	2010·4	450	1,818
56—60.....	16,846	426·0	2436·4	481	2,299
61—65.....	10,276	357·0	2793·4	412	2,711
66—70.....	4,477	221·5	3014·9	271	2,982
71—84.....	1,734	181·8	3196·7	162	3,144
	179,884	3196·7		3,144	

Column 3 of the preceding table shows, that if the rate of mortality in the Society had been the same as among the male population of England and Wales, the total number of deaths would have been 3196·59, while, according to column 5 of Table III., the expected mortality by the tables of the Society was 3,194, and, as in column 5 of the present table, the actual mortality had been 3,144. It is therefore evident that the average rate of mortality for the whole population of this country does not, for the whole term of life under observation in Table IV., differ in any important degree from the rate assumed for the basis of the Society's calculations; and it is further evident from a comparison of the last column of Table III., with columns 4 and 6 of Table IV., that the rate of mortality among the general population of England and Wales approximates nearer to the actual rate of mortality.

experienced by the Society than the rate assumed in the construction of the Society's tables.

In Table V. will be found the rate of mortality according to various series of observations. The results in column 2 are deduced from columns 2 and 5 of Table IV., and, therefore, represent the rate of mortality experienced in the Gotha Life Office. And it will be seen, that throughout the whole of life, the mortality is almost always less than among the peerage or the males of the government annuitants, and not differing widely from the results for the whole male population of England and Wales, and those for the lives of the assurance societies in England, but the mortality is much above that experienced by the members generally of friendly societies in England and Wales. A consideration of the peculiar features and constitution of those humble provident institutions, will fully explain the reasons of this increased longevity among the industrious and provident portion of the working classes of this country; and those desiring to enter fully into this part of the question, will find it treated of at length in "Contributions to Vital Statistics." Column 4 in the following table represents the rate of mortality as observed among the male members generally of friendly societies throughout England and Wales; but if reference be made to

TABLE V.

Ages.	Rate of Mortality per Cent. according to the					
	Gotha Life Office.	England and Wales. Males. Whole Population.	Friendly Societies. Rural, Town, and City Districts. England and Wales. Males.	Peerage.	Government Annuitants. Males.	Assurance Societies in England.
15—25....	·418	·815	·679	·507	1·37	·738
26—30....	·808	·998	·732	·788	1·38	·814
31—35....	·926	1·063	·798	·949	1·18	·892
36—40....	1·026	1·157	·887	1·130	1·40	·991
41—45....	1·084	1·319	1·038	1·533	1·40	1·125
46—50....	1·490	1·560	1·281	2·118	1·49	1·426
51—55....	1·921	1·935	1·696	2·581	2·32	1·909
56—60....	2·855	2·529	2·244	3·212	2·92	2·639
61—65....	4·009	3·474	3·030	4·322	4·08	3·784
66—70....	6·053	4·947	4·614	5·764	6·17	5·563
71—84....	9·343	10·482	8·584	8·155	11·43	11·147

Appendix A of the Report of the Select Committee of the House of Lords appointed to consider certain matters connected with Provident Associations, session 1847-8, paper No. 126, some interesting examples will be found of remarkable differences in the rates of mortality and sickness in those societies. In a very able paper by Mr. Farr, in the second edition of "M'Culloch's Statistics of the British Empire," it is stated that there is reason to believe that further inquiries will show that not only sickness, but mortality, will increase in friendly societies generally; and the results of a recent investigation among the members of Odd Fellow Societies appear to support this opinion, in so far

as respects mortality. Recently, a careful examination was made into the rate of mortality among the members of one of the learned societies of the metropolis, composed exclusively of the members of the medical profession, and the results are strikingly corroborative of the general principle which seems to regulate the mortality of other classes, namely, that the humble but industrious working classes, whose prudential habits lead them to become members of these societies, are subject to a less rate of mortality than any other, and that the higher the class of society over which the observations extend, until the peerage, or highest class of all, is observed, in which there is less of the regular and healthful daily exercise essential to the condition of the industrious workman, the greater the rate of mortality; and for intermediate classes, a varying degree of mortality is observable, following pretty closely the scale of their position in social rank.

The results of this inquiry will be found in detail in the following table.

The first column represents the years of membership.

The second column shows the number of members who have been 1, 2 3, 4, &c., years connected with the Society, and the other columns sufficiently explain themselves.

It thus appears, that of the 684 members elected, 1 died in the first year of membership, and 15 were alive and under observation, being in the first year of membership. Again, 668 entered on the second year of membership; 2 died in that year, 10 withdrew, from various causes, and 22 are alive who are members of not more than two years' standing. In like manner, 4 entered on the forty-second year of membership; 1 died in that year, and 1 of them remained under observation and alive as a member of forty-two years' standing; and, likewise, of the 2 members who entered on the forty-third year of membership, 1 died in that year, and the other passed on to the forty-fourth year of membership, and died. It hence appears that the whole 684 members elected have passed through 8,316 years of observation, or about 12 years to each member.

Column 8 shows the number of complete years to which the members were exposed to the risk of mortality; and an inspection of the last column shows the rate of mortality to which the members are subject for the different periods of membership, the average rate of mortality being 1.225 per cent.; but it will be seen, that as the period of membership increases, or, in other words, as the age of the members advances, there is a marked increase in the rate of mortality.

Assuming the average age of admission of members to range from 25 to 35 years of age, although it may perhaps be more strictly stated to vary from 25 to 30, an inspection of the following figures will show, that at the younger ages, the mortality is much under the average of the population generally at the same ages; but at the older and more advanced periods of life, the mortality is greater.

TABLE VI.

Years in the Society.	Number under Observation in each Year.	Died.	Discontinued, Resigned, Ceased to Pay, and Expelled.	Alive.	Total gone off or Discontinued.	Half of Discontinued.	Number Exposed to Risk.	Mortality per Cent.
1.....	684	1	15	16	342	0.409
2.....	668	2	10	22	34	5	663	
3.....	634	2	25	25	52	12.5	621.5	
4.....	582	4	21	19	44	10.5	571.5	
5.....	538	7	20	12	39	10	528	0.639
6.....	499	3	25	24	52	12.5	486.5	
7.....	447	1	36	14	51	18	429	
8.....	396	3	15	15	33	7.5	388.5	
9.....	363	9	22	31	4.5	358.5	1.477
10.....	332	2	13	15	30	6.5	325.5	
11.....	302	5	6	19	30	3	299	
12.....	272	6	12	6	24	6	266	
13.....	248	2	10	14	26	5	243	1.355
14.....	222	5	4	11	20	2	220	
15.....	202	5	11	13	29	5.5	196.5	
16.....	173	1	8	2	11	4	169	
17.....	162	3	7	3	13	3.5	158.5	1.383
18.....	149	....	4	3	7	2	147
19.....	142	2	3	....	5	1.5	140.5
20.....	137	4	8	2	14	4	133	
21.....	123	1	4	4	9	2	121	4.146
22.....	114	....	1	3	4	.5	113.5
23.....	110	3	2	3	8	1	109	
24.....	102	....	....	1	1	....	102
25.....	101	2	2	1	5	1	100	3.500
26.....	96	6	2	6	14	1	95	
27.....	82	6	1	2	9	.5	81.5	
28.....	73	1	5	2	8	2.5	70.5	
29.....	65	2	4	2	8	2	63	8.108
30.....	57	5	2	2	9	1	56	
31.....	48	....	4	7	11	2	46
32.....	37	....	1	4	5	.5	36.5
33.....	32	1	1	2	32	2.222
34.....	30	1	1	1	3	.5	29.5	
35.....	27	2	....	1	3	....	27
36.....	24	4	3	7	14	1.5	22.5	
37.....	10	2	2	10	2.222
38.....	8	....	1	....	1	.5	7.5
39.....	7	....	....	1	1	....	7
40.....	6	....	....	1	1	....	6
41.....	5	1	1	5	2.222
42.....	4	1	....	1	2	....	4
43.....	2	1	....	....	1	....	2
44.....	1	1	....	....	1	....	1
	8,316	96	280	308	684	140.0	7834.0	1.2225

The following abstract of the preceding table will exhibit the results in a more distinct form:—

ABSTRACT B.

Year of Membership.	Number exposed to risk.	Died.	Mortality per Cent.	Mortality per Cent. England and Wales.	Average Age.
1—4.....	2198·0	9	0·409	·998	25—30
5—9.....	2190·5	14	0·639	1·063	31—35
10—14.....	1353·5	20	1·477	1·157	36—40
15—19.....	811·5	11	1·355	1·319	41—45
20—24.....	578·5	8	1·383	1·560	46—50
25—29.....	410·0	17	4·146	1·935	51—55
30—34.....	200·0	7	3·500	2·529	56—60
35—39.....	74·0	6	8·108	3·474	61—65
40—44.....	18·0	4	2·222	4·947	66—70
	7834·0	96	1·225		

For the whole period under observation, it is therefore evident that the rate of mortality is somewhat higher than among the general population of England and Wales.

From the facts brought forward, it therefore appears that the duration of life in the German States of Europe, among the higher provident classes, embracing the principles of life assurance, is fully equal to that among the like classes in this country, and the value of life amongst those classes approximates closely to the rate of mortality for the general population of England and Wales; but among the humbler provident classes who enrol themselves members of friendly societies of this country, there is experienced a prolonged duration of life above all others.

That an idea may be formed of how far the results in Tables I., II., III., IV., and the second column of Table V., may be indicative of the state of health of the populations of the different German States, it may be important to show the number of persons assured for the middle of the period of the 21 years 1829-49, namely, at the end of the year 1838, in each of those districts.

District.	Persons.	In every 100,000 Inhabitants.	District.	Persons.	In every 100,000 Inhabitants.
Ducal and Grand Ducal Saxon Territories	753	118	Brought forward....	7,466	
Free Cities	188	62	Oldenburg	74	29
Brunswick	123	49	Hessen Darmstadt	200	28
Principalities, Lippe and Waldeck	73	46	Mecklenburg, Schwerin, and Strelitz	151	27
Prussia	4,267	41	Hohenzollern-Hechingen and Sigmaringen}	10	16
Hessen Cassel	289	41	Bavaria	584	14
Hanover	625	37	Baden	168	14
Principalities, Schwarzburg, Anhalt, and Reuss	129	36	Nassau	41	11
Württemberg	515	32	Danish German Territories	33	8
Kingdom of Saxony	504	31	German Switzerland	52	4
Carried forward....	7,466			8,779	

The greatest number of the assurers, nearly 49 per cent. of the whole, are in Prussia; but the States having the greatest proportion of its population assured, are the Ducal and Grand Ducal Saxon territories; and those having the least proportion assured, are the Danish and Swiss German territories.

With the view to determine whether any and what law prevailed in relation to the period which has elapsed from the date of assuring to the date of death among those persons dying in the years 1839-49, distinguishing the age at the time of being assured, a detailed abstract has been made of each policy, classifying those together of the same age at the date of assuring, and at the same time setting forth the period elapsing until the day of death, and thence arriving at the average period which elapsed from taking out their policies till the day of death, for those entering the Society at different ages. The following table shows the results arrived at:—

TABLE VII.

Period elapsed from the date of Assuring, till Death, of those Dying among the Assured, during the Years 1839-49.

Age at which the Assurances were Effected.	No. of Deaths.	Duration of Life.		Duration of Life to each Person.		Age at which the Assurances were Effected.	No. of Deaths.	Duration of Life.		Duration of Life to each Person.	
		Years.	Mths.	Years.	Months.			Years.	Mths.	Years.	Months.
15....	2	12	11	6	6	42....	74	725	9	9	10
16....	...	....	....	....	....	43....	83	843	9	10	2
17....	1	5	5	5	5	44....	74	679	8	9	2
18....	...	....	....	....	....	45....	68	639	2	9	1
19....	1	7	8	7	8	46....	69	681	4	9	10
20....	3	14	8	4	11	47....	81	785	9	9	8
21....	1	7	2	7	2	48....	83	766	8	9	3
22....	4	43	7	10	11	49....	87	845	3	9	9
23....	5	40	....	8	....	50....	89	864	2	9	8
24....	14	95	6	6	10	51....	73	720	2	9	10
25....	20	161	....	8	1	52....	72	635	6	8	10
26....	16	95	2	6	....	53....	87	852	11	9	10
27....	29	266	11	9	3	54....	72	804	....	11	2
28....	48	316	3	6	7	55....	64	656	9	10	3
29....	51	386	3	7	7	56....	76	708	4	9	4
30....	49	420	....	8	7	57....	49	422	2	8	7
31....	52	411	5	7	11	58....	81	825	3	10	2
32....	70	616	11	8	10	59....	72	574	11	8	....
33....	78	567	....	7	3	60....	28	307	1	11	....
34....	62	531	8	8	7	61....	14	177	....	12	8
35....	93	727	1	7	10	62....	11	99	9	9	1
36....	66	533	8	8	1	63....	8	67	....	8	5
37....	78	742	1	9	6	64....	7	59	4	8	6
38....	75	655	5	8	9	65....	3	29	4	9	9
39....	72	552	11	7	8	66....	2	13	3	6	7
40....	81	863	6	10	8	67....	2	17	5	8	8
41....	71	702	11	9	11						

No very distinct or obvious difference is here observable in the various class of results, and attention is therefore directed to the following abstract:—

ABSTRACT C.

Period elapsed from the date of Assuring, till Death, of those Dying among the Assured, during the Years 1839-49.

Age.	No.	Duration of Life.		Duration of Life to each Person.		Duration of Life.		Duration of Life to each Person.	
		Years.	Months.	Years.	Months.	Years.	Months.	Years.	Months.
15—19....	4	26	....	6	6	26	....	6	6
20—24....	27	200	11	7	5	1,246	6	6	6
25—29....	164	1,225	7	7	6				
30—34....	311	2,547	....	8	2	5,758	2	8	4
35—39....	384	3,211	2	8	4				
40—44....	383	3,815	7	10	....	7,533	9	9	9
45—49....	388	3,718	2	9	7				
50—54....	393	3,876	9	9	11	7,064	2	9	8
55—59....	342	3,187	5	9	4				
60—64....	68	710	2	10	5	770	2	10	3
65—67....	7	60	....	8	7				
Total....	2,471	22,778	9	9	3				

In which it will be seen, contrary to what would generally be expected, that the period which has elapsed from the date of the policies to the date of death is less at the younger than the older ages, so that, if such a law were found generally to prevail, it would follow that a Life Office would find the deaths taking place among the younger lives more immediate than among the older class of lives. Whether this unexpected and apparently anomalous result may arise from the fact that, at the earlier ages, the deaths take place from acute and rapidly-fatal diseases, and at the advanced periods of life, they happen from chronic and lingering causes, is not clearly borne out by the present body of facts; but that such is very probably the case,

Age.	Per Centage of Members Sick during each Year.	Ratio of Sick Members to every 100 not Sick in every Year.	Mortality per Cent. among those Actually Sick.	Sickness per Annum among those Actually Sick.	Total Amount of Sickness to each Death.
11—15....	21·9565	28·1337	·9901	4·1231	416·4290
16—20....	22·0743	28·3273	2·8571	3·5887	125·6032
21—25....	22·0386	28·2686	3·0539	3·8518	126·1271
26—30 ..	21·6997	27·7134	3·3271	4·1921	125·9977
31—35....	21·0147	26·6058	3·7592	4·3585	115·9411
36—40....	21·5471	27·4650	4·0686	4·9463	121·5732
41—45....	22·9858	29·8463	4·5306	5·9418	131·1468
46—50....	24·6042	32·6333	5·1657	6·8556	132·7123
51—55....	27·6422	38·2022	6·2401	8·5104	136·3839
56—60....	30·2424	43·3535	7·2732	10·9261	150·2235
61—65....	35·5676	55·2015	8·6163	15·1975	176·3808
66—70....	46·8493	88·1443	9·6004	24·2217	252·2988
71—75....	58·3750	140·2400	12·1306	32·6275	268·9679
76—80....	73·5916	278·6667	11·3636	36·2367	318·8876
81—85....	74·4624	291·5790	18·4116	37·7633	205·1064
86—90....	79·4872	387·5000	17·2043	41·0829	238·7943
91—95....	50·0000	100·0000	....	39·2450	....

will appear from a consideration of the preceding figures, derived some time ago from the experience of friendly societies in Scotland, from which very accurate and interesting returns were received and carefully analysed.

It is therefore evident that, from the younger to the more advanced ages, there is, among all classes, a uniform increasing rate of sickness to each death. At the term of life 31-5, there is 116 weeks' sickness to each death, and the rate goes on increasing to the period 76-80, in which the amount of sickness is 319 weeks to each death.

However, the preceding simply shows the average amount of sickness among all the members of a society to each death taking place among the same members at different ages, and the results are not fairly applicable as illustrative of the principle or law manifested in Abstract C, in which it would appear that the period which has elapsed between the date of effecting policies and the date of death of the persons assured thereunder, is less at the younger than at the older ages. For to determine whether this law has any connexion with the more acute forms of disease peculiar to younger ages, the sickness resulting ending in death, or among those finally dying, at the given terms of life under consideration, should only be measured; but it may be interesting, and also important, to show the relation in respect to the duration of sickness not ending in death, as well as that proving fatal.

In the following abstract will be found the results of 5,640 attacks of sickness, resulting in recovery, from which it appears that the average duration of each attack is 8·636 weeks, but it is necessary to observe how very much the duration of sickness depends on the age of the persons affected; under the age of 35, the average duration of each attack is about 4·372 weeks; from that to the age of 50, each attack lasts about 5·131 weeks; in the subsequent period of ten years, the duration of each attack is 11·717 weeks; and beyond that age (60), it will be seen that sickness becomes very protracted.

ABSTRACT D.

Duration of Sickness ending in Recovery.

Ages.	Attacks.	Sickness.	Average Duration of each Attack.
11—15.....	12	39·428	3·286
16—20.....	106	592·143	5·586
21—25.....	587	2399·714	4·088
26—30.....	900	4363·000	4·848
31—35.....	955	3798·857	3·978
36—40.....	772	3870·571	5·014
41—45.....	678	3598·286	5·307
46—50.....	433	2192·857	5·064
51—55.....	415	4794·428	11·553
55—60.....	364	4333·000	11·904
61—65.....	246	5286·286	21·489
66—70.....	88	4219·143	47·945
71—75.....	68	5713·571	84·023
76—80.....	14	2862·286	204·449
81—85.....	2	642·857	321·428
	5,640	48706·427	8·636

It should be clearly kept in view, that the abstract just given represents such sickness only as ended in the recovery of the members; but in the following abstract is given the results of 1,012 attacks of sickness among 437 persons, whose deaths took place at the terms of life represented in the table. The figures given in columns 8, 9, and 10, of this abstract, differ in a remarkable manner from the results in Abstract D, at corresponding ages.

ABSTRACT E.

Duration of Sickness ending in Death.

Ages.	a. Total Amount of Sickness.	b. Amount of Sickness immediately before Death.	a-b. Amount not ending in Death of those afterwards Dying.	c. Attacks.	d. Persons.	c-d. Attacks not ending in Death of those afterwards Dying.	Average duration of each Attack in Total Sick- ness of those afterwards Dying.	Average duration of Attack immediately before Death.	$\frac{a-b}{c-d}$ Average dura- tion of Attacks not ending in Death of those afterwards Dying.
16-20...	157-428	132-714	24-714	11	7	4	14-312	18-959	6-178
21-25...	430-571	282-857	714-714	50	26	24	8-611	10-879	6-230
26-30...	1120-000	657-714	462-286	85	38	47	13-176	17-308	9-836
31-35...	1215-286	700-714	514-572	119	48	71	10-212	14-598	7-247
36-40...	654-143	338-857	315-286	100	40	60	6-541	8-471	5-255
41-45...	560-428	229-428	331-000	80	38	42	7-005	6-037	7-880
46-50...	1252-857	800-428	452-429	86	36	50	14-568	22-234	9-048
51-55...	1839-857	1178-714	661-143	122	47	75	15-081	25-079	8-815
56-60...	2838-571	2167-000	671-571	127	49	78	22-351	44-234	8-603
61-65...	3816-000	3435-714	380-286	104	41	63	36-692	83-798	6-036
66-70...	1715-571	1379-286	336-285	47	23	24	36-502	59-969	14-011
71-75...	8154-428	3097-143	57-285	48	23	25	65-717	134-658	2-291
76-80...	1726-571	1673-571	53-000	15	7	8	115-105	239-081	6-625
81-85...	3384-143	3313-714	70-429	17	13	4	199-067	254-901	17-607
86-90...	...	...	...	...	...	...	...	...	...
91-95...	353-000	353-000	...	1	1	...	353-000	353-000	...
	24218-854	19740-854	4478-000	1012	437	575	23-932	45-173	7-788

It will be seen that column 8 represents the average duration of each attack of sickness, including that ending in death, as well as preceding attacks of sickness. In Abstract D, under the age of 35, it was 4-372 weeks; but in column 8, the average duration is 10-830 weeks; and in the more advanced periods of life, a similar increase in the duration of sickness is observable; so that it would seem to follow that the duration of sickness is greater among those dying at periods not very remote from the attacks, than among those surviving; and, consequently, if the duration simply of sickness be closely observed, it offers an element of considerable importance in measuring the expectation or future lifetime of individuals. In Abstract D, the average duration of each attack of sickness for all ages is 8-636 weeks; but in Abstract E, the average duration is 23-932 weeks. The former class of facts relate to persons who all survived the period of twelve years over which the observations extended; but the latter class belong to persons all of whom died within the same period of twelve years. The force of this conclusion will be more strongly felt, if attention be directed to the figures in column 9, which represents the average duration of the attack of sickness ending in death, at which it will be seen that at every term of life the fatal attack of sickness is of much greater duration than those represented in column 8, or in Abstract D. The following condensed abstract will assist in giving a general view of those results.

Ages.	Average Duration of each Attack of Sickness			
	Ending in Final Recovery.	Not ending in Death, but among those afterwards Dying.	Immediately preceding Death.	Among those Dying, including the Attacks immediately preceding Death, and others.
	Abstract D. Col. 10, Abstract E.		Col. 9, Abstract E.	Col. 8, Abstract E.
11—35	4·372	11·442	14·907	10·830
36—50	5·131	7·228	12·006	9·276
51—60	11·717	8·711	34·851	18·789
60 and upwards	45·034	7·178	16·226	11·372
Total	8·636	7·788	45·173	23·932

It is hence obvious, that having regard to the ages of persons, the duration of any attack of sickness is a most important consideration in calculating the chances of recovery. If another element, the frequency of a series of attacks of sickness, were introduced (but the details it would here be out of place to discuss), the value or the duration of life of invalids might be calculated with even more precision than the expectation of life of the general community; and if the analysis were carried one step further, and the same classification adopted as in the preceding abstracts, only keeping the sickness peculiar to each disease by itself, a series of results would be arrived at, furnishing elements of the greatest value in the estimation of the value of life among persons who have suffered or are suffering from disease. Notwithstanding the immense pecuniary interests at stake by life offices, no inquiry or investigation of this kind has ever been undertaken by them, and the preceding and other collateral collections of facts, it is believed, are the only sources of information so analysed which anywhere exists. From the specimens now furnished from the records of friendly societies, the very remarkable aids which they must afford in estimating the value of peculiar classes of lives, by confining fluctuations within known limits, must be evident. The trouble and expense of collecting such data is very great, but still the information itself is of tenfold value to the life institutions of the country.

In the following abstract will be found the combined results of Abstracts D and E, preceding; and in this, as in all the others, will be found evidence of the same general principle or law of nature which has led to this investigation of the duration of sickness peculiar to different terms of life, namely, that the duration of sickness either in the attacks immediately preceding death, or otherwise, is less protracted at the younger and middle periods of life, than at the more advanced; and hence the solution of the otherwise anomalous facts arrived at in Abstract C, that of the deaths which have taken place among the lives assured at the earlier ages, the time elapsed from the date of the policies to that of death is less than among those assured at the more advanced ages.

ABSTRACT F.

Average Duration of Total Sickness.

Agea.	Total Number of Attacks, including those ending in Recovery and those ending in Death.	Total Amount of Sickness, including that ending in Recovery and that ending in Death.	Average Duration of each Attack of Total Sickness, including that ending in Recovery, and that ending in Death.	Number of Attacks, including those ending in Recovery and those not ending in Death, of those afterwards Dying.	Amount of Sickness, including that ending in Recovery, and that not ending in Death, of those afterwards Dying.	Average Duration of each Attack of Sickness, including that ending in Recovery, and that not ending in Death, of those afterwards Dying.
11—15	12	39·428	3·286	12	39·428	3·286
16—20	117	749·571	6·407	110	616·857	5·608
21—25	637	2830·285	4·443	611	2547·428	4·169
26—30	985	5483·000	5·566	947	4825·286	5·095
31—35	1,074	5014·143	4·668	1,026	4313·429	4·204
36—40	872	4524·714	5·188	832	4185·857	5·031
41—45	758	4158·714	5·486	720	3925·286	5·457
46—50	519	3445·714	6·639	483	2645·286	5·477
51—55	537	6634·285	12·354	490	5455·571	11·133
56—60	491	7171·571	14·606	442	5004·571	11·322
61—65	350	9102·286	26·004	309	5666·572	18·338
66—70	135	5934·714	43·960	112	4555·428	40·673
71—75	116	8867·999	76·448	93	5770·856	62·052
76—80	29	4588·857	158·236	22	2915·286	132·513
81—85	19	4027·000	211·947	6	713·286	118·881
86—90	....	....	....	....	....	....
91—95	1	353·000	353·000	....	....	....
	6,652	72925·281	10·959	6,215	53184·427	8·557

Attention is next directed to the following table, which is somewhat analogous in its character to Abstract C, only that the element of age, with the view to its more simple application to practical purposes, is excluded. From the register of deaths for the years 1840-9, an abstract has been made of those which have taken place in the first, second, third, and every subsequent year, from the date of the policies, and the results constitute the following table:—

TABLE VIII.

Year.	Deaths among the Assured after the lapse of the following Number of Years from the Date of Assurance.																					
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	Total.
1840	11	14	14	9	17	9	13	15	17	8	5	13	...	...	...	...	...	...	...	...	...	143
1841	14	9	11	10	10	11	14	14	23	15	7	8	18	...	...	...	...	...	...	...	...	164
1842	6	8	13	17	14	17	15	20	14	14	24	10	5	21	...	...	...	...	...	...	...	198
1843	9	13	5	19	16	10	14	7	14	16	15	20	13	8	24	...	...	...	...	...	...	203
1844	4	11	10	9	9	8	14	15	13	7	19	19	26	10	8	18	...	...	...	...	...	200
1840 to } 1844 ... }	44	53	33	64	66	55	70	71	81	60	70	70	62	39	32	18	...	...	...	...	...	908
1845	11	13	9	8	5	17	12	21	10	11	8	20	25	16	16	12	24	...	...	...	...	238
1846	7	13	3	8	20	10	11	15	21	9	14	9	14	18	16	9	8	24	...	...	...	229
1847	14	14	15	16	8	12	12	18	12	15	19	18	18	20	25	19	6	7	25	...	...	293
1848	7	14	12	14	17	17	16	15	18	14	23	21	21	11	16	23	27	17	7	29	...	339
1849	4	13	14	14	8	19	14	13	15	17	13	17	16	22	15	24	17	22	8	14	38	337
Total ...	87	120	106	124	124	130	135	153	157	126	147	155	156	126	120	105	82	70	40	43	38	2,344
Order of Mor- tality ... }	6	9	8	10	10	12	13	15	18	11	14	16	17	11	9	7	5	4	2	3	1	

On referring to Abstract C, it will be found that the average period which had elapsed from the date of the policies to the day of death, was nine years and three months; and in the preceding table it will be also seen, that the greatest number of deaths has taken place in the ninth year after the date of the policies, the oldest policy being then about twenty-one years. During the five years 1840-4, it is curious to observe, that the greatest number of deaths was also among policies of nine years' standing, although the oldest policy was then of sixteen years' duration only; and it is still further to be observed, that during the five years 1840-4, about one-half of all the deaths took place in the first eight years of the policies; but for the ten years 1840-9, one-half of all the deaths happened in the first nine years, the oldest policies being, in the latter case, of five years' greater duration. At the same time, it will be seen that the number of deaths per annum has gone on increasing from 143, in 1840, to 337, in 1849—in the former year, the number of persons assured being 10,234, and in the latter, 15,036; so that, although the number of persons assured increased about 48 per cent., the deaths increased to the extent of 136 per cent. The numerals on the top of the table show the duration of the policies, and those in the bottom line of the table show the order in which the deaths have taken place, from the minimum, in the twenty-first year, to the maximum, in the ninth year. It is obvious that the solution of the results here presented will be derived from the law of mortality exhibited in Table IV.; the number of persons assured in each year, and the ages of those persons, and that any fluctuation whatever taking place in any one of these elements, must disturb the results set forth in Table VIII. This is observable in Abstract C, the age of the persons assured showing an important influence on the duration of the policies.

There are also other important practical considerations, as well as those of a more strictly philosophical and scientific nature, connected with the period of the year at which the deaths take place, and it may

therefore be interesting to show how far the seasons affect the number of deaths in the aggregate, as well as at the different ages or terms of life. In the following table will be found an analysis of all the deaths which have taken place in the eleven years 1839-49, distinguishing the months of the year in which they have happened, and also the ages at death:—

TABLE IX.

Ages at which the Deaths among the Assured have taken place in different Months, during the Years 1839-49.

Ages.	MONTHS.												Total.
	Jan.	Feb.	Mar.	April.	May	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	
16 ....	....	....	....	1	....	....	....	....	....	....	....	....	1
22—24 ....	....	....	1	....	1	....	1	....	....	....	....	....	3
25—29	2	3	2	2	1	....	5	2	6	4	5	5	37
30—34	8	12	15	10	11	5	6	10	8	9	9	10	113
35—39	16	18	19	10	15	19	20	19	20	23	14	24	217
40—44	22	20	31	26	33	16	22	15	21	24	20	28	278
45—49	26	21	34	28	33	26	27	19	27	19	29	24	313
50—54	25	21	33	33	22	26	23	31	31	26	30	33	334
55—59	31	32	30	36	30	29	22	29	29	21	41	33	363
60—64	25	23	41	28	34	19	35	23	31	34	36	26	355
65—69	21	28	29	28	21	26	18	14	22	19	26	19	271
70—74	11	12	12	7	16	10	13	9	9	14	10	16	139
75—79	5	3	3	5	4	2	2	2	3	3	6	4	42
80—83	1	2	1	....	....	....	....	....	....	....	....	1	5
Total....	193	195	251	214	221	178	194	173	207	196	226	223	2,471

It thus appears that the greatest number of deaths has taken place in the month of March, and the least in the month of August; the three months of least mortality being August, June, and January; the three months next in order being July, February, and October; then September, April, and May; and the three months of highest mortality are December, November, and March. If, however, the year were divided into quarters of consecutive months, it will be found that they stand in the following order:—

Quarter in which the Mortality is of			
Lowest Intensity.	Second Intensity.	Third Intensity.	Highest Intensity.
June	December	September	March
July	January	October	April
August	February	November	May

The months of March, April, and May, it will be seen, constitute the quarter of highest mortality; and out of the following five classes of facts, it will be found that, in three instances, they constitute the quarter of highest mortality, and the month of March enters into the highest quarter of four out of the five groups of facts.

TABLE X.

SWEDEN.—Years 1831-5.			GOTHA LIFE OFFICE.—Years 1829-49.	
Months.	Males.	Both Sexes.	Months.	Males.
July	11,608	22,416	August	173
October	11,988	23,391	June	178
November	12,848	25,579	January	193
June	13,474	25,955	July	194
December	14,390	28,134	February	195
August	14,467	28,391	October	196
February	14,480	28,731	September	207
September	14,569	28,404	April	214
January	15,867	31,231	May	221
May	16,220	32,130	December	223
March	16,317	32,299	November	226
April	16,476	32,666	March	251

SAXONY. Years 1832-8.		BELGIUM TOWNS. Years 1815-26.		GLASGOW. Years 1836-42.	
Months.	Males.	Months.	Both Sexes.	Months.	Both Sexes.
October	1,893	July	0·87	June	4,258
July	1,920	June	0·90	October	4,339
November	1,921	August	0·91	September	4,409
September	1,927	May	0·95	July	4,457
June	1,932	September	0·97	May	4,542
December	1,986	April	1·00	November	4,597
August	2,007	October	1·00	April	4,720
January	2,220	November	1·02	August	4,873
February	2,231	March	1·05	December	5,267
May	2,331	December	1·08	February	5,517
March	2,387	February	1·09	March	5,523
April	2,424	January	1·16	January	7,090

But in respect to the quarter of least mortality, the results are more variable. July enters into four of the five groups, June into two, and August into only one of the five groups. These remarks have had reference to the aggregate mortality only, but if reference be now made to Table IX., it will be seen that the seasons have a very material influence on the mortality of different ages. The following abstract exhibits the results for different terms of life.

ABSTRACT G.

Ages.	MONTHS.												Total.
	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	
Under 40	26	33	37	23	28	24	32	31	34	36	28	39	371
40—59	104	94	128	123	118	97	94	94	108	90	120	118	1,288
60 & up- wards ...}	63	68	86	68	75	57	68	48	65	70	78	66	812
Total	193	195	251	214	221	178	194	173	207	196	226	223	2,471

Under the age of 40, it thus appears that the least mortality has been in the month of April, and the greatest in the month of December; but in the term of life 40-59, the least mortality has been in the month of October, and the highest in the month of March also. Again, in respect to the most advanced term of life, those aged 60 and upwards, the least mortality has, as in the case for the aggregate of all ages, been in the month of August, and the highest likewise in the month of March. The following, then, will represent the quarters of highest and lowest mortality:—

	Ages at which the Deaths have happened.			
	Under Age 40.	Ages 40—59.	Aged 60 and upwards.	Results for all Ages.
Quarter of Least Mortality	April, May, June.	June, July, August.	June, July, August.	June, July, August.
Quarter Second in Intensity	July, August, September.	December, January, February.	December, January, February.	December, January, February.
Quarter Third in Intensity	January, February, March.	September, October, Nov.	September, October, Nov.	September, October, Nov.
Quarter of Highest Mortality	October, Nov., December.	March, April, May.	March, April, May.	March, April, May.

Hence, by grouping the different months into quarters formed of consecutive months, representing the highest and lowest mortality, it will be seen that the combinations agree for all the terms of life unless those for ages under 40, and this is in conformity to the results already observed under Abstracts C, D, E, and F, the more acute form of diseases peculiar to those ages being differently affected by changes of temperature and seasons; but if, instead of the combinations into quarters, the mortality be arranged into the order of the months, a much greater disparity in the results will be observable:—

Order of the Months of Lowest and Highest Mortality, for those Dying aged				
	Under 40.	40—59.	60 and upwards.	All Ages.
1	April	October	August	August
2	June	February	June	June
3	January	July	January	January
4	May	August	September	July
5	November	June	December	February
6	August	January	February	October
7	July	September	April	September
8	February	May	July	April
9	September	December	October	May
10	October	November	May	December
11	March	April	November	November
12	December	March	March	March

The influence of the seasons on the mortality at different ages is hence obvious, and there can be little doubt that a more extended

series of observations would lead to a well-defined law in this respect. The importance of the question to life institutions and to science, it is hoped, will induce those interested in such subjects to investigate the matter further.

The next part of this inquiry to be brought under consideration is that which relates to the disease, or cause of death. The Report of the Gotha Society for the year 1838 contains an abstract of the causes of death for the ten years 1829-38, arranging the diseases according to a general and popular form of classification; and the Report for the year 1848 contains a similar abstract for the twenty years 1829-48. The following shows the results arrived at:—

ABSTRACT H.

DISEASE.	Number of Deaths during the Years														
	1829 to 1838.										1829 to 1848.				
	At Ages					Total.	At Ages					Total.			
	21 to 30.	31 to 40.	41 to 50.	51 to 60.	61 to 72.		17 to 30.	31 to 40.	41 to 50.	51 to 60.	61 to 70.		71 to 83.		
Fever	7	21	38	50	9	135	17	101	143	144	71	15	491		
Influenza .....	...	9	10	3	7	29	...	11	12	9	12	5	49	
Asiatic Cholera .....	...	2	5	5	...	12	...	4	12	8	5	...	20	
Exanthemic Diseases	1	2	...	1	...	4	2	5	...	1	1	...	9		
Local Inflammation	2	20	19	29	15	85	13	72	106	103	75	16	384		
Gout and Rheumatism	3	3	7	9	3	25	4	13	25	23	23	2	89		
Chronic Pulmonary Diseases	8	38	33	22	7	108	19	115	166	111	46	1	458		
Chronic Abdominal Diseases ...	...	14	14	10	7	45	...	37	65	86	74	12	274	
Mental Affections .....	...	3	1	1	2	7	...	9	11	18	9	2	49	
Diseases of Spinal Marrow .....	...	3	3	2	2	10	...	5	9	7	10	2	33	
Organic Diseases of the Heart...	1	...	4	3	...	8	2	4	12	20	16	1	55		
Dropsy .....	...	4	17	25	6	52	3	16	56	94	71	11	251	
Cancers and Malignant Ulcers .....	...	1	13	8	5	27	...	2	23	20	14	6	64	
Apoplexy	2	10	21	52	27	112	7	29	69	151	116	20	392		
Old Age .....	...	...	...	...	4	4	...	...	1	35	42	78	...
Accidents .....	...	2	3	3	...	8	...	6	11	13	6	...	36	
Murdered .....	...	...	...	...	...	...	...	1	1	...	...	...	2
Suicide	2	4	2	3	...	11	4	15	19	20	6	...	64		
Total	26	136	190	226	94	672	70	445	739	828	590	135	2,807		

It will thus be seen that, during the first ten years, 672 deaths happened; and during the whole period of twenty years, 2,807 deaths.

ABSTRACT I.

Disease.	Ratio of Deaths from each of Six Causes to the whole Mortality, during the Years					
	1829-1838.		1839-1848.		1829-1848.	
	Deaths.	Per Centage.	Deaths.	Per Centage.	Deaths.	Per Centage.
Fever	125	18·602	366	17·141	491	17·492
Chronic Pulmonary Diseases	108	16·071	350	16·392	458	16·317
Apoplexy	112	16·667	280	13·113	392	13·965
Local Inflammation	85	12·649	299	14·003	384	13·680
Chronic Abdominal Diseases	45	6·696	229	10·725	274	9·761
Dropsy	52	7·738	199	9·320	251	8·942
Six causes	527	78·423	1,723	80·694	2,250	80·157

The preceding table represents the ratio of deaths which have taken place from six principal classes of disease during each decennial period, and during the whole twenty years, without distinction of ages.

From a subsequent table, it will be found that the average age of the assured varied, in the twenty years to which the preceding figures relate, from 43 years to 47 years, and hence might be expected an increased number of deaths from apoplexy, which is generally believed to press with greater intensity as age increases; such, however, it will be seen, is not the case, so far as the preceding facts are concerned, for, in the first decennial period, the deaths from apoplexy formed about 17 per cent. of the whole, while in the second ten, the deaths from that cause were a little above 13 per cent. only. There can be no doubt that this difference is, to a great extent, if not entirely, due to the small number of deaths included in the first period; and it will be, therefore, more advantageous to examine the results in connexion with the number of lives exposed to the risk of mortality at the various terms of life. The following exhibits, therefore, the ratio of deaths per cent. to the population exposed to the risk of mortality from different causes, according to the preceding classification of disease:—

TABLE XI.

DISEASE.	Ratio of Deaths from Different Causes during 1829 to 1848, at the following Ages.													
	17—30.		31—40.		41—50.		51—60.		61—70.		71—83.		All Ages.	
	Number of Lives at Risk during 1829—1848.													
	10,074		46,884		57,308		36,421		13,110		1,393		165,090	
	No. of Deaths.	Mortality Per Cent.	No. of Deaths.	Mortality Per Cent.	No. of Deaths.	Mortality Per Cent.	No. of Deaths.	Mortality Per Cent.	No. of Deaths.	Mortality Per Cent.	No. of Deaths.	Mortality Per Cent.	No. of Deaths.	Mortality Per Cent.
Fever.....	17	·169	101	·215	143	·250	144	·395	71	·542	15	1·077	491	·297
Influenza.....	...	...	11	·023	12	·021	9	·025	12	·092	5	·869	49	·030
Asiatic Cholera.....	...	...	4	·009	12	·021	8	·022	5	·038	...	...	29	·018
Exanthemic Diseases.....	2	·020	5	·011	...	...	1	·003	?	·008	...	...	9	·005
Local Inflammation.....	12	·119	72	·154	106	·185	103	·283	75	·572	16	1·149	384	·233
Gout and Rheumatism.....	4	·040	13	·028	25	·044	22	·060	23	·175	2	·144	89	·054
Chronic Pulmonary Diseases.....	19	·189	115	·245	166	·290	111	·305	46	·351	1	·072	455	·277
Chronic Abdominal Diseases.....	...	...	37	·079	65	·114	86	·236	74	·564	12	·861	274	·132
Mental Affections.....	...	...	9	·019	11	·019	18	·049	9	·069	2	·144	49	·030
Diseases of Spinal Marrow.....	...	...	5	·011	9	·016	7	·019	10	·076	2	·144	33	·020
Organic Diseases of the Heart.....	2	·020	4	·009	12	·021	20	·055	16	·122	1	·072	55	·033
Dropsy.....	8	·030	16	·034	56	·098	94	·258	71	·542	11	·790	251	·152
Cancers and Malignant Ulcers.....	...	...	2	·004	22	·038	20	·055	14	·107	6	·431	64	·039
Apoplexy.....	7	·069	29	·062	69	·121	151	·415	116	·885	20	1·436	392	·257
Old Age.....	...	...	...	...	...	...	1	·003	35	·267	42	3·015	78	·047
Accidents.....	...	...	6	·013	11	·019	13	·036	6	·046	...	...	36	·022
Murdered.....	...	...	1	·002	1	·002	...	...	...	...	...	...	2	·001
Suicide.....	4	·040	15	·032	19	·033	20	·055	6	·046	...	...	64	·039
All Diseases.....	70	·695	445	·949	739	1·291	828	2·273	590	4·500	135	9·691	2,807	1·703

In the class of disease denominated fever, in the preceding table, it will be seen that the mortality uniformly increases from the younger to the older ages. With respect to the group of diseases "local inflammation," it will be seen, that although there is an increase in the rate of mortality from the younger to the older ages, still the difference is very slight under the age of 50, and the intensity greatest of all at the

term of life 61-70. Again, with respect to "chronic pulmonary diseases," the bulk of the deaths have taken place between the ages of 31-70, and the rate of mortality increases from .245 per cent. in the term of life 31-40, to .351 per cent. at ages 61-70. In the class "chronic abdominal diseases," the mortality increases in a very rapid manner from the younger to the older ages, being only .079 per cent. at ages 31-40, and as much as .564 per cent. at ages 61-70. Similar results connect themselves with the deaths from dropsy, but in the section "apoplexy," the greatest variation is observable in connexion with a difference of age; at the term of life 31-40, the mortality is .062 per cent., increasing rapidly till ages 71-83, in which it is 1.436 per cent. from this disease. This is in accordance with the received opinion of medical men on the character of this disease.

If the influence of the preceding mentioned six groups of diseases be now viewed in connexion with specific terms of life, it will be seen that, in the decennial period, 31-40, the greatest rate of mortality has taken place from "pulmonary diseases," next from fevers, then from "local inflammations," "abdominal diseases," "apoplexy," and least of all from "dropsy;" and in the next ten years of life, the mortality of these diseases follows the same order as to their intensity. In the term of life 51-60, however, the following is the order in which the same six diseases stand as to intensity:—apoplexy, fever, pulmonary diseases, inflammation, dropsy, and abdominal diseases. And in the ten years 61-70, the order is again varied, being apoplexy, inflammation, abdominal diseases, fever and dropsy equal, and pulmonary diseases at the bottom of the scale; and in the most advanced term of life of the preceding abstract, the following is the order of intensity of the diseases:—apoplexy, inflammation, fever, abdominal diseases, dropsy, and pulmonary diseases. The following arrangement may perhaps exhibit these results in a more simple form:—

Diseases arranged according to the order of their Intensity at the following Terms of Life.

31—40.	41—50.	51—60.	61—70.	71—83.
Pulmonary Diseases.	Pulmonary Diseases.	Apoplexy.	Apoplexy.	Apoplexy.
Fevers.	Fevers.	Fevers.	Inflammations.	Inflammations.
Inflammations.	Inflammations.	Pulmonary Diseases.	Abdominal Diseases.	Fevers.
Abdominal Diseases.	Abdominal Diseases.	Inflammations.	Fever. }	Abdominal Diseases.
Apoplexy.	Apoplexy.	Dropsy.	Dropsy. }	Dropsy.
Dropsy.	Dropsy.	Abdominal Diseases.	Pulmonary Diseases.	Pulmonary Diseases.

Pulmonary disease is, therefore, so far as the preceding facts are concerned, essentially the disease of highest intensity in the destruction

of life under 50, and above that age, apoplexy; the other diseases maintaining varying but intermediate positions in the scale of mortality.

The preceding classification of diseases, although being that given in the Reports referred to, is evidently not sufficiently exact in its arrangement to merit much further criticism on the results, and it has therefore been thought desirable to classify the deaths according to a better nosological system. The whole of the deaths for the eleven years 1839-49, have, therefore, been so classified, the facts given not admitting of the deaths in the first ten years being so treated. It will be seen, that during the eleven years 1839-49, there have been 2,471 deaths, and in the ten years 1829-38, there have been 672 deaths, making in all 3,143, so that nearly 79 per cent. of the whole become subject to the more complete nosological classification. The information furnished respecting each death, not only gives the age and cause

TABLE XII.—Deaths in the Gotha Life Office

CAUSES OF DEATH.	AGES.													
	Under 20.		20—24.		25—29.		30—34.		35—39.		40—44.			
	No.	Duration	No.	Duration	No.	Duration	No.	Duration	No.	Duration	No.	Duration	Yrs. Ms.	Yrs. Ms.
All Causes	1	Yrs. Ms.	3	Yrs. Ms.	37	Yrs. Ms.	113	Yrs. Ms.	217	Yrs. Ms.	278	Yrs. Ms.	1,851	1
Specified Causes	1	1 5	3	6 9	37	107 10	113	391 2	217	1,129 4	278	1,851	1	1
I. Zymotic Diseases	1	0 2	10	24 11	38	110 4	60	325 8	64	458	3	...
SPORADIC DISEASES.
II. Dropsy, Cancer, and other Diseases of uncertain or variable seat	2	5 6	9	28 10	18	87 9	38	298	7	...
III. Tubercular Diseases	1	1 2	9	36 5	38	158 0	54	279 2	74	343	10	...
IV. Diseases of the Brain, Spinal Marrow, Nerves, and Senses	6	17 0	5	16 3	22	99 10	29	220	0	...
V. Diseases of the Heart and Blood-vessels	1	1 6	1	1 1	7	33 8	6	65	9	...
VI. Diseases of the Lungs and of the other Organs of Respiration	1	1 5	1	5 5	4	10 10	9	33 4	26	126 1	29	190	5	...
VII. Diseases of the Stomach, Liver, and other Organs of Digestion	1	2 3	3	11 3	14	79 9	25	191	6	...
VIII. Diseases of the Kidneys, &c.	5	33 3	2	12	4	...
IX. Childbirth, Diseases of the Uterus, &c.	3	4 7	...	...	...	...	...	...
X. Rheumatism, Diseases of the Bones, Joints, &c.	1	7 7	...	...	2	12 6	1	1	1	...
XI. Diseases of the Skin, Cellular Tissue, &c.	1	3 5	...	...	...	...	...	...	...	...
XIII. Debility
XV. Age
XVII. Violence, Privation, Cold, and Intemperance	2	8 5	7	27 6	9	51 8	10	69	4	...
I. Small Pox	1	0 2	...	...	1	13	4	...
Measles
Scarlatina	1	3 9	1	2 2	...	...	...	...	...	...
Croup
Diarrhoea
Dysentery	3	14 2	...	1	7	5
Cholera	3	11 1	4	18 6	7	43	8	...
Influenza	1	0 11	1	8 3	5	26	4	...
Purpura and Scurvy	1	10 7	...	...	...	...	...	...	...	...
Ague	1	1 1	...	...	...	...	...	...
Typhus	1	0 2	8	21 2	25	69 0	43	244 11	44	324	10	...
Metria, or Puerperal Fever	1	1 3	2	24 8	...	...	...	...
Rheumatic Fever	1	...	5	24 8	4	8 0	3	18	9	...
Erysipelas	1	7 2	3	23	11	...

of death, but also the age at the time the life was assured, and in every instance distinguishing the ages to the nearest month, so that a new and important element in vital statistics is thus introduced, by which can be seen the facility with which different diseases may engraft themselves on the constitution at different terms of life, or, in other words, the rate at which the deterioration of life takes place from the standard of ordinary health, at different ages, from various diseases; for, with respect to all the lives now under consideration, at the time the assurances were effected, they underwent the usual scrutiny before admission into the Society.

In the following table will be found an abstract of the number of deaths which have taken place at the various periods of life from different diseases, and at the same time setting forth the period which has elapsed, in years and months, from the date of effecting the policies to the date of death:—

from All Causes, and Total Duration.

AGES.

45—49.		50—54.		55—59.		60—64.		65—69.		70—74.		75—79.		80—85.		All Ages.	
No.	Duration	No.	Duration	No.	Duration	No.	Duration	No.	Duration	No.	Duration	No.	Duration	No.	Duration	No.	Duration
	Yrs. Ms.		Yrs. Ms.		Yrs. Ms.		Yrs. Ms.		Yrs. Ms.		Yrs. Ms.		Yrs. Ms.		Yrs. Ms.		Yrs. Ms.
313	2,551 10	334	2,961 8	363	3,534 3	355	3,834 0	271	3,336 1	139	2,005 11	42	690 1	5	96 4	2,471	22,507 9
312	2,546 3	330	2,935 0	361	3,521 6	355	3,834 0	270	3,328 5	139	2,005 11	42	690 1	5	96 4	2,463	22,455 1
67	507 6	64	557 9	66	571 8	59	641 4	43	528 1	20	278 0	9	145 1	2	39 0	503	4,187 9
49	432 8	46	406 11	66	604 2	72	631 3	47	611 0	25	375 5	8	124 8	...	...	380	3,606 11
66	575 1	67	634 6	54	611 5	49	566 4	20	239 3	5	68 2	...	...	...	...	437	3,513 4
45	367 7	58	529 2	63	600 7	62	726 9	53	654 2	26	378 3	6	103 3	...	...	375	3,712 10
11	85 0	10	112 7	19	149 6	12	139 10	2	31 0	...	...	...	...	...	...	69	619 11
28	189 7	33	197 3	34	379 1	32	356 4	39	465 9	13	168 1	2	31 10	...	...	251	2,155 5
20	138 1	26	250 11	37	397 3	41	419 0	25	309 11	12	187 9	3	53 8	...	...	207	2,052 10
4	44 4	6	47 6	3	21 9	10	127 4	8	92 11	2	21 9	...	...	...	...	40	401 2
5	47 2	1	8 9	...	...	1	10 0	...	...	...	...	...	...	...	...	10	70 6
5	52 0	2	16 0	1	10 10	...	...	...	...	1	14 1	...	...	...	...	13	114 1
1	9 5	1	7 2	...	...	1	19 7	1	9 3	...	...	...	...	...	...	5	48 10
...	...	...	...	1	6 11	...	...	3	44 6	...	...	...	...	...	...	4	51 5
...	...	...	...	...	...	6	65 4	24	295 4	35	514 3	14	231 7	3	57 4	83	1,163 10
11	97 10	16	166 6	17	168 4	10	138 0	5	49 3	...	...	...	...	...	...	87	796 0
1	6 6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	19 10
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	0 2
...	...	1	1 1	...	...	...	...	...	...	...	...	...	...	...	...	3	7 0
...	...	1	10 7	...	...	...	...	...	...	...	...	...	...	...	...	1	10 7
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	27 11
4	30 10	5	41 6	1	8 10	4	33 5	3	41 9	1	11 10	1	15 9	...	...	23	205 6
8	75 4	8	97 4	10	84 9	8	111 0	9	111 9	2	37 11	1	20 0	...	...	60	611 4
2	24 7	4	47 9	5	64 6	10	97 10	3	26 3	10	120 11	5	81 1	1	19 1	47	517 6
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	10 7
1	8 9	...	...	6	44 7	2	17 7	...	...	...	...	...	...	...	...	10	73 0
44	327 0	43	343 11	36	290 3	28	286 4	25	308 11	5	62 8	2	28 3	...	...	305	2,307 5
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	25 11
3	14 9	3	19 10	3	24 0	5	71 0	1	13 1	...	...	...	...	1	19 11	28	208 0
4	19 9	1	1 9	4	44 1	1	10 7	2	26 4	1	20 4	...	...	...	...	17	153 11

TABLE XII.—Deaths in the Gotha Life Office

CAUSES OF DEATH.	AGES.													
	Under 20.		20—24.		25—29.		30—34.		35—39.		40—44.			
	No.	Duration	No.	Duration	No.	Duration	No.	Duration	No.	Duration	No.	Duration	No.	Duration
	Yrs.	Ms.	Yrs.	Ms.	Yrs.	Ms.	Yrs.	Ms.	Yrs.	Ms.	Yrs.	Ms.	Yrs.	Ms.
II. Hæmorrhage.....	1	3 2	1	1 11	4	13 5	7	63 5	...	...
Dropsy	1	2 4	7	23 7	8	32 11	21	155 7	...	...
Ulcer
Mortification
Cancer	1	3 4	4	38 1	5	55 4	...	...
Gout	2	3 4	5	44 3	...	...
III. Scrofula
Tubæ Mesenterica	2	9 4	5	29 4	4	39 1	...	...
Phthisis, or Consumption	1	1 2	9	36 5	36	148 8	49	249 10	70	304 9	...	...
IV. Cephalitis	2	3 7	4	15 10	4	27 11	...	...
Apoplexy	4	12 8	...	...	15	65 5	15	109 11	...	...
Paralysis	1	0 10	...	...	...	...	...	...	...	...
Insanity	1	5 5	1	1 9	...	...
Disease of the Brain, &c.	1	3 6	3	12 8	2	13 2	9	80 5	...	...
V. Pericarditis	2	8 11	...	...	...	...
Aneurism	1	5 10	...	2 7	...	...
Disease of Heart	1	1 6	1	1 1	4	18 11	1	63 2	...	...
VI. Laryngitis	1	1 7	...	...	...	...
Bronchitis	1	0 2	...	...	...	...
Pneumonia	1	1 5	1	5 5	4	10 10	9	33 4	23	119 11	29	190 5	...	...
Asthma
Disease of Lungs	1	4 5	...	...	...	...
VII. Quinsey	1	4 4	1	1 5	...	...
Gastritis	1	5 7	...	...
Enteritis	1	7 10	3	17 11	...	...
Peritonitis	1	2 3	2	9 1	5	24 3	3	28 4	...	...
Ascites	1	7 2	...	...
Ulceration of Intestines, &c.	1	6 7	...	...	...	...
Hernia
Ileus
Intussusception
Structure of Intestinal Canal
Disease of Stomach, &c.	4	31 6	4	34 9	...	...
Hepatitis	1	2 2	1	4 7	4	28 10	...	...
Jaundice	1	12 0	...	...
Disease of Liver	1	0 8	7	55 6	...	...
Disease of Spleen
VIII. Nephritis
Nephria, or Bright's Disease	3	23 3	1	1 7	...	...
Diabetes	1	0 11	1	10 9	...	...
Stone
Cystitis
Disease of Kidneys, &c.	1	9 1	...	...	...	...
X. Arthritis	1	7 7	...	...	1	6 6	...	...	...	...
Rheumatism	1	6 0	1	1 1	...	...
Disease of Joints, &c.
XI. Phlegmon
Disease of Skin, &c.	1	3 5	...	...	...	...	...	...	...	...
XVII. Hanging, &c.	1	9 4	...	...
Fractures
Wounds
Other Violence	2	8 5	7	27 6	9	51 8	9	60 0	...	...
Causes not specified

The preceding table will be useful to enable those interested in the facts contained in it to effect other combinations which may suggest themselves; but Table XIII, which is deduced from it, is that which

from All Causes, and Total Duration.—Continued.

AGES.

45—49.		50—54.		55—59.		60—64.		65—69.		70—74.		75—79.		80—85.		All Ages.	
No.	Duration	No.	Duration	No.	Duration	No.	Duration	No.	Duration	No.	Duration	No.	Duration	No.	Duration	No.	Duration
6	Yrs. Ms.	3	Yrs. Ms.	6	Yrs. Ms.	4	Yrs. Ms.	1	Yrs. Ms.	15	Yrs. Ms.	1	Yrs. Ms.	...	Yrs. Ms.	34	Yrs. Ms.
27	46 8	29	24 3	43	72 6	45	40 9	31	14 6	15	221 9	5	9 11	...	...	232	290 6
...	241 11	...	239 8	...	414 6	...	376 1	...	407 2	...	...	...	85 3	...	...	1	2,205 11
...	...	...	...	...	7 5	...	...	...	...	...	...	...	...	...	...	...	7 5
...	...	...	27 11	...	...	...	18 4	...	5 5	...	37 2	...	...	...	...	1	88 10
9	95 11	8	85 10	12	108 1	15	128 2	10	135 2	4	57 11	2	29 6	...	...	70	713 4
7	50 2	3	29 3	4	15 1	6	67 11	4	51 9	4	55 9	...	...	...	...	35	320 6
2	5 3	1	15 2	...	61 6	...	61 4	...	64 5	...	11 9	...	...	...	...	3	20 5
1	4 4	1	4 11	...	61 6	...	61 4	...	64 5	...	11 9	...	...	...	...	32	286 0
63	565 6	65	614 5	48	549 11	43	505 0	14	174 10	1	56 5	...	...	...	...	402	3,206 11
6	58 7	3	19 2	2	16 9	3	31 5	3	35 5	1	15 1	...	...	...	...	28	223 9
34	270 11	38	360 10	50	475 11	48	566 9	45	560 8	19	275 1	6	103 3	...	...	274	2,734 11
1	1 2	3	19 0	1	8 2	1	13 1	3	36 11	2	25 8	...	...	...	...	12	104 10
...	...	...	18 3	...	...	...	...	...	...	...	...	...	...	...	...	5	25 5
4	36 11	11	111 11	10	99 9	10	115 6	2	21 2	4	62 5	...	...	...	...	56	557 3
...
...	...	...	13 7	...	...	...	...	...	...	...	...	...	...	...	...	4	22 6
10	79 4	8	99 0	18	141 2	12	139 10	2	30 1	...	...	...	...	...	...	61	574 1
...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1 7
25	157 11	33	197 3	30	332 2	22	247 11	37	432 7	12	152 7	2	81 10	...	...	229	1,945 3
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	72 2
2	16 7	...	...	2	20 10	2	23 6	2	33 2	1	15 6	...	...	...	...	7	72 11
...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	15 11
1	10 1	1	10 2	...	7 8	2	9 9	...	...	...	...	...	...	...	...	6	41 4
1	8 2	2	8 3	...	10 10	2	7 2	...	...	1	16 6	...	...	...	...	11	89 2
4	16 9	6	49 3	5	53 4	4	35 2	4	49 4	1	19 1	...	...	...	...	35	286 10
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	7 2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	6 7
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	16 9
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	13 0
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	13 4
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	68 2
7	64 10	7	61 0	13	131 5	11	129 8	9	114 10	3	42 6	1	19 10	...	...	59	681 2
1	10 2	2	7 4	6	58 0	6	44 10	2	27 1	1	17 1	1	19 11	...	...	25	220 0
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	102 6
6	28 1	7	59 2	7	83 8	10	118 0	7	83 11	8	51 10	...	...	...	...	48	542 6
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	24 5
...
1	7 2	1	12 8	...	...	1	17 10	1	15 6	...	...	...	...	...	...	2	25 0
1	11 3	...	...	...	...	1	15 6	...	...	...	...	...	...	...	...	8	84 7
1	11 6	2	15 11	1	9 10	2	25 8	...	...	...	...	...	...	...	...	8	74 8
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	10 1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	12 3
1	14 5	3	18 11	2	11 11	5	56 2	6	62 6	2	21 9	...	...	...	...	20	194 9
...
1	17 3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	31 6
3	19 6	2	16 0	1	10 10	...	...	...	...	...	...	...	...	...	...	8	53 5
1	15 3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	29 4
...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	19 7
1	9 5	1	7 2	...	...	...	...	1	9 3	...	...	...	...	...	...	4	29 3
...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	9 4
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	29 0
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	21 4
11	97 10	16	166 6	15	142 11	9	119 3	4	43 1	...	...	...	...	...	...	82	704 0
...
1	5 7	4	26 8	2	12 9	...	...	1	7 8	...	...	...	...	...	...	8	52 8

is more particularly applicable to the immediate question, and which differs from Table XII only in giving the average period, instead of the absolute period, which elapsed from the date of assuring to that of death.

TABLE XIII.—Deaths in the Gotha Life Office

CAUSES OF DEATH.	AGES.													
	Under 20.		20—24.		25—29.		30—34.		35—39.		40—44.			
	No.	Average Duration	No.	Average Duration	No.	Average Duration	No.	Average Duration	No.	Average Duration	No.	Average Duration		
	Yrs.	Ms.	Yrs.	Ms.	Yrs.	Ms.	Yrs.	Ms.	Yrs.	Ms.	Yrs.	Ms.		
All Causes	1	1 5	3	2 3	37	3 2	113	3 6	217	5 2	278	6 8		
Specified Causes	1	1 5	3	2 3	37	3 2	113	3 6	217	5 2	278	6 8		
I. Zymotic Diseases	1	0 2	10	2 5	38	2 11	60	5 5	64	7 2		
SPORADIC DISEASES.														
II. Dropsy, Cancer, and other Diseases of uncertain, or variable seat	2	2 9	9	3 2	18	4 10	38	7 7		
III. Tubercular Diseases	1	1 2	9	4 0	38	4 1	54	5 2	74	4 8		
IV. Diseases of the Brain, Spinal Marrow, Nerves, and Senses	6	2 10	5	3 3	22	4 6	29	7 7		
V. Diseases of the Heart and Blood-vessels	1	1 6	1	1 1	7	4 9	6	10 11		
VI. Diseases of the Lungs and of the other Organs of Respiration	1	1 5	1	5 5	4	2 8	9	3 8	26	4 10	29	6 7		
VII. Diseases of the Stomach, Liver, and other Organs of Digestion	1	2 3	3	3 0	14	5 8	25	7 8		
VIII. Diseases of the Kidneys, &c.	5	6 7	2	6 2		
IX. Childbirth, Diseases of the Uterus, &c.	3	1 6	...	...	...	...
X. Rheumatism, Diseases of the Bones, Joints, &c.	1	7 7	...	...	2	6 3	1	1 1		
XI. Diseases of the Skin, Cellular Tissue, &c.	1	3 5	...	...	...	...	...	...
XIII. Debility		
XV. Age		
XVII. Violence, Privation, Cold, and Intemperance	2	4 2	7	3 11	9	5 8	10	6 11		
I. Small Pox	1	0 2	...	...	1	13 4		
Measles	1	2 2	...	...	...	...
Scarlatina	1	3 9	1	2 2	...	...	...	...
Croup		
Diarrhoea		
Dysentery	3	4 8	1	7 5		
Cholera	3	3 8	4	4 7	7	6 2		
Influenza	1	1 11	1	8 3	5	5 3		
Purpura and Scurvy		
Ague	1	1 1	...	...	...	...
Typhus	1	0 2	8	2 7	25	2 9	45	5 5	44	7 4		
Metria, or Puerperal Fever	1	1 3	2	13 4	...	...
Rheumatic Fever	1	...	5	4 11	4	2 0	3	6 3		
Erysipelas	1	7 2	3	7 11		
II. Hemorrhage	1	3 2	1	1 11	4	3 4	7	9 1		
Dropsy	1	2 4	7	3 4	8	4 1	21	7 5		
Ulcer		
Mortification		
Cancer	1	3 4	4	9 6	5	7 1		
Gout	2	1 8	5	8 10		
III. Scrofula	2	4 8	5	5 10	4	9 9		
Tuberc Mesenterica	2	4 8	49	5 1	70	4 4		
Phthisis, or Consumption	1	1 2	9	4 1	36	4 2	49	5 1	70	4 4		
IV. Cephalitis	2	1 9	4	4 0	4	7 0		
Apoplexy	4	3 2	...	...	15	4 4	15	7 4		
Paralysis	1	0 10	...	...	...	...	...	...
Insanity	1	5 5	1	1 9		
Disease of the Brain, &c.	1	3 6	3	4 3	2	6 7	9	8 11		
V. Pericarditis	2	4 5	...	...
Aneurism	1	5 10	...	...
Disease of Heart	1	1 6	1	1 1	4	4 9	5	12 8		

from All Causes, and Average Duration.

AGES.

45—49.		50—54.		55—59.		60—64.		65—69.		70—74.		75—79.		80—85.		All Ages.	
No.	Average Duration	No.	Average Duration	No.	Average Duration	No.	Average Duration	No.	Average Duration	No.	Average Duration	No.	Average Duration	No.	Average Duration	No.	Average Duration
313	8 2	334	8 10	363	9 8	355	10 10	271	12 4	139	14 9	42	16 6	5	19 3	2,471	9 1
312	8 2	330	8 11	361	9 8	355	10 10	270	12 4	139	14 9	42	16 6	5	19 3	2,463	9 1
67	7 7	64	8 9	66	8 8	59	10 1	43	12 3	20	13 5	9	16 1	2	19 6	503	8 4
49	8 10	46	8 10	66	9 2	72	8 9	47	13 0	25	15 0	8	15 7	...	...	380	9 6
66	8 9	67	9 6	54	11 4	49	11 7	20	12 0	5	13 7	...	...	...	...	437	8 0
45	8 2	58	9 2	63	9 6	62	11 8	53	12 4	26	14 7	6	17 2	...	...	375	9 2
11	7 9	10	11 3	19	7 10	12	11 8	2	15 6	...	...	...	...	...	...	69	9 0
28	6 5	33	6 0	34	11 2	32	11 2	39	11 11	13	12 11	2	15 11	...	...	251	8 7
20	6 11	26	9 8	37	10 9	41	10 3	25	12 4	12	15 8	3	17 10	...	...	207	9 1
4	11 1	6	7 11	3	7 3	10	12 8	8	11 7	2	10 10	...	...	...	...	40	10 0
5	9 5	1	8 9	...	...	1	10 0	...	...	...	...	...	...	...	...	10	7 1
5	10 4	2	8 0	1	10 10	1	14 1	...	...	...	...	...	...	...	...	13	8 9
1	9 5	1	7 2	...	...	1	19 7	1	9 3	...	...	...	...	...	...	5	9 9
...	...	...	...	1	6 11	...	...	3	14 10	...	...	...	...	...	...	4	14 4
...	...	...	...	...	...	6	10 10	24	12 4	35	14 11	14	16 7	3	19 1	82	44 2
11	8 11	16	10 5	17	7 11	10	13 10	5	9 10	...	...	...	...	...	...	87	8 10
1	6 6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	9 11
...	...	1	1 1	...	...	...	...	...	...	...	...	...	...	...	...	1	0 2
...	...	1	10 7	...	...	...	...	...	...	...	...	...	...	...	...	3	2 4
...	...	...	...	...	...	1	13 7	...	...	1	14 4	...	...	...	...	2	10 7
4	7 8	5	8 3	1	8 10	4	8 4	3	13 11	1	11 10	1	15 9	...	...	23	8 11
8	9 5	8	12 2	10	8 5	8	13 10	9	12 5	2	18 11	1	20 0	...	...	60	10 2
2	12 3	4	11 11	5	13 10	10	9 9	3	8 9	10	12 1	5	16 2	1	19 1	47	11 0
...	...	...	...	1	10 7	...	...	...	...	...	...	...	...	...	...	1	10 7
1	8 9	...	...	6	7 4	2	8 9	...	...	...	...	...	...	...	...	10	7 2
44	7 5	42	8 2	36	8 0	28	10 2	25	12 4	5	12 6	2	14 2	...	...	305	7 9
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	8 8
3	4 11	2	6 11	3	8 0	5	14 2	1	13 1	...	...	...	...	1	19 11	28	7 5
4	4 11	1	1 9	4	11 0	1	10 7	2	13 2	1	20 4	...	...	...	...	17	9 1
6	7 9	3	8 1	6	12 1	4	10 2	1	14 6	...	...	1	9 11	...	...	34	8 7
27	9 0	29	8 3	43	9 8	45	8 4	31	13 2	15	14 9	5	17 1	...	...	232	9 7
...	...	...	...	1	7 5	...	...	...	...	...	...	...	...	...	...	1	7 5
...	...	3	9 4	...	...	2	9 2	1	5 5	2	18 7	...	...	...	...	8	11 1
...	10 5	8	10 9	12	9 0	15	8 7	10	13 4	4	14 6	2	14 9	...	...	70	10 2
7	7 2	3	9 9	4	3 9	6	11 4	4	12 11	4	14 8	...	...	...	...	35	9 2
2	2 7	1	15 2	...	...	...	...	...	...	...	...	...	...	...	...	3	6 10
4	4 4	1	4 11	6	10 3	6	10 3	6	10 9	1	11 9	...	...	...	...	32	8 11
63	9 0	65	9 5	48	11 5	43	11 9	14	12 6	4	14 1	...	...	...	...	402	8 0
6	9 9	3	6 4	2	8 4	3	10 6	3	11 10	1	15 1	...	...	...	...	28	8 0
34	8 0	38	9 6	50	9 6	48	11 10	45	12 6	19	14 6	6	17 3	...	...	274	10 0
1	1 2	3	6 4	1	8 2	1	13 1	3	12 4	2	12 10	...	...	...	...	12	8 9
...	...	3	6 1	...	...	...	...	...	...	...	...	...	...	...	...	5	5 1
4	9 3	11	10 2	10	10 0	10	11 7	2	10 7	4	15 7	...	...	...	...	56	7 11
...	...	2	6 9	...	...	...	...	...	...	...	...	...	...	...	...	4	5 7
1	5 8	...	...	1	8 4	...	...	...	...	...	...	...	...	...	...	4	5 7
10	7 11	8	12 5	18	17 10	12	11 8	2	15 0	...	...	...	...	...	...	61	9 5

TABLE XIII.—Deaths in the Gotha Life Office

CAUSES OF DEATH.	AGES.											
	Under 20.		20—24.		25—29.		30—34.		35—39.		40—44.	
	No.	Average Duration	No.	Average Duration	No.	Average Duration	No.	Average Duration	No.	Average Duration	No.	Average Duration
VI. Laryngitis	Yrs. Ms.	...	Yrs. Ms.	...	Yrs. Ms.	...	Yrs. Ms.	1	7	...	Yrs. Ms.
Bronchitis	1	0	2	...
Pneumonia	1	1 5	1	5 5	4	2 9	9	3 8	23	5 9	29	6 7
Asthma
Disease of Lungs	1	4 5	...	...
VII. Quinsey	1	4 4	1	1 5
Gastritis	7
Enteritis	1	7 10	3	5 11
Peritonitis	1	2 3	2	4 7	5	4 10	3	9 5
Ascites	1	7 2
Ulceration of Intestines, &c.	1	6 7	...	...
Hernia
Illeus
Intussusception
Stricture of Intestinal Canal
Disease of Stomach, &c.	4	7 10	4	8 8
Hepatitis	1	2 2	1	4 7	4	7 8
Jaundice	12	0
Disease of Liver	1	0 8	7	7 11
Disease of Spleen
VIII. Nephritis	3	7 9	1	1 7
Nephria, or Bright's Disease	1	0 11	1	10 9
Diabetes
Stone
Cystitis	1	9 1	...	...
Disease of Kidneys, &c.
X. Arthritis	1	7 7	...	...	1	6 6	...	...
Rheumatism	1	6 0	1	1 1
Disease of Joints, &c.
XI. Phlegmon
Disease of Skin, &c.	1	3 5	...	...	...	...	...	...
XVII. Hanging, &c.	1	9 4
Fractures
Wounds
Other Violence	2	4 2	7	3 11	9	5 8	9	6 8
Causes not specified

In this table, it will be found that the causes of death are unspecified in 8 only out of the 2,471 cases recorded. The results herein given are so novel, but yet so varied, that it will be impossible to discuss them fully within the limits of this paper, and the most obvious will therefore be only brought under consideration. In Abstract C, preceding, it was seen that, measuring the period which elapsed from the date of effecting the policies to the date of death, the interval was less for young lives than for older ones; and here, by adopting the opposite test, of measuring the interval from the date of death to the date of assuring, the same law is found to prevail, although in a more remarkable degree; and this difference is evidently owing to the circumstance, that all deaths among policies of long standing must necessarily be included in the more advanced periods of life in Table XIII, but included in younger periods of life in Abstract C. However, as the same law shows itself in both classes of results, and differing only in degree, the greater weight is thereby given to the unexpected prin-

from All Causes, and Average Duration.—Continued.

AGES.

45—49.		50—54.		55—59.		60—64.		65—69.		70—74.		75—79.		80—85.		All Ages.	
No.	Average Duration	No.	Average Duration	No.	Average Duration	No.	Average Duration	No.	Average Duration	No.	Average Duration	No.	Average Duration	No.	Average Duration	No.	Average Duration
	Yrs. Ms.		Yrs. Ms.		Yrs. Ms.		Yrs. Ms.		Yrs. Ms.		Yrs. Ms.		Yrs. Ms.		Yrs. Ms.		Yrs. Ms.
...	...	...	...	2	13 0	5	10 9	...	...	...	...	...	...	...	...	1	1 7
1	15 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	10 7
25	6 3	33	5 11	30	11 1	23	10 9	37	11 8	12	12 9	2	15 11	...	...	229	8 4
...	...	...	...	...	...	2	11 9	2	16 7	1	15 6	...	...	...	...	5	14 5
2	8 3	...	...	2	10 5	2	15 7	...	...	...	...	...	...	...	...	7	10 5
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	5 4
1	10 1	1	10 2	1	7 8	2	4 11	...	...	...	...	...	...	...	...	6	6 11
1	8 2	2	10 5	1	10 10	2	3 7	...	...	1	16 6	...	...	...	...	11	8 1
4	4 2	6	8 2	5	10 8	4	8 9	4	12 4	1	19 1	...	...	...	...	35	8 2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	7 2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	6 7
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	8 4
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	13 0
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	13 4
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	14 6
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	59	10 6
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	25	8 10
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	14 8
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	48	10 0
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	8 2
...
1	7 2	...	...	...	...	1	17 10	...	...	...	...	...	...	...	...	2	12 6
1	11 3	1	12 8	...	...	1	15 6	1	20 4	...	...	...	...	...	...	8	10 7
1	11 6	2	7 11	1	4 11	2	12 10	...	...	...	...	...	...	...	...	8	9 4
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	10 1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	12 2
1	14 5	3	9 6	2	6 0	5	11 3	6	10 5	2	10 11	...	...	...	...	20	9 9
...
1	17 3	2	16 0	1	10 0	...	...	...	...	...	...	...	...	...	...	3	10 6
3	6 6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	6 8
1	15 3	...	...	...	...	...	...	...	...	1	14 1	...	...	...	...	2	14 8
...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	19 7
1	9 5	1	7 2	...	...	...	...	1	9 3	...	...	...	...	...	...	4	29 3
...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	9 4
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	14 6
11	8 11	16	10 5	15	9 7	9	13 3	4	10 9	...	...	...	...	...	...	2	10 8
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	82	8 7
1	5 7	4	6 8	2	6 4	...	...	1	7 8	...	...	...	...	...	...	8	6 7

ciples disclosed, and should lead those connected with the management of life offices to the serious consideration of the financial questions which so obviously arise out of the results. From the relatively high rate of mortality at the more advanced ages, than at the younger ages, among assured lives, compared with those of the community generally, an opinion almost universally prevails, that there must be a loss, instead of a profit, connected with the transactions on old lives, and in consequence a number of life offices will not assure the lives of old persons. But if the ratio of lapsed policies, as set forth in Table XV,—and the ratio is much higher in this country, be viewed in connexion with the most remarkable law disclosed in Abstract C and Table XIII, there can no longer be any doubt that the general opinion is a most fallacious one, and unfortunately prevails, to the serious detriment of the older class of lives, to whom, in pecuniary transactions, the principles of life assurance are more strictly applicable than any other. A part from statistical evidence, it must be sufficiently obvious, on an

attentive consideration of the doctrine of probabilities, that in guaranteeing any event connected with the law of averages, that the nearer to unity the chances of the contingency taking place be, the less the hazard of any adventure on the result. And if to this general principle be added the incidental pecuniary advantages arising from the moral influences and considerations which bear on the prosperity of a life office, the absurd prejudice which prevails against assuring old lives must immediately appear. The following shows the results for six of the principal classes of disease:—

ABSTRACT K.

Average Period elapsed from the Date of Assuring to the Date of Death, among Persons Dying at the following Ages.

DISEASE.	25 to 29		30 to 34		35 to 39		40 to 49		50 to 54		55 to 59		60 to 64		65 to 69		70 to 74		75 to 79		All Ages			
	Yrs.	Months.	Yrs.	Months.	Yrs.	Months.	Yrs.	Months.	Yrs.	Months.	Yrs.	Months.	Yrs.	Months.	Yrs.	Months.	Yrs.	Months.	Yrs.	Months.				
All Diseases	3	2	3	6	5	2	6	8	8	2	8	10	9	8	10	12	4	14	9	16	6	9	1	
I. Zymotic Diseases	2	5	2	11	5	5	7	2	7	7	8	9	8	8	10	1	12	3	13	5	16	1	8	4
II. Dropsy, Cancer, and other Diseases of uncertain or variable seat	2	9	3	2	4	10	7	7	8	10	8	10	9	2	8	9	13	...	15	...	15	7	9	6
III. Tubercular Diseases	4	...	4	1	5	2	4	8	8	9	9	6	11	4	11	7	12	...	13	7	...	...	8	...
IV. Diseases of the Spinal Marrow, Nerves, and Senses	2	10	3	3	4	6	7	7	8	2	9	2	9	6	11	8	12	4	14	7	17	2	9	2
VI. Diseases of the Lungs and of the other Organs of Respiration	2	8	3	8	4	10	6	7	6	5	6	...	11	2	11	2	11	11	12	11	15	11	8	7
VII. Diseases of the Stomach, Liver, and other Organs of Respiration	2	3	3	9	5	8	7	8	6	11	9	8	10	9	10	3	12	4	15	8	17	10	9	1

Of the diseases in class I, namely, the zymotic and sporadic diseases, it will be seen that the duration of the assurances on the lives falling by this class of disease, is less at every age than the average from all causes, except at the term of life 35-44; and it will likewise be seen, that for all ages taken collectively, the duration of the policies lapsing from this disease is less than the average duration of all policies.

The same observation does not apply to class II. Under age 40, the duration of the policies is less than the average; but in the term of life 40-54, greater; the succeeding ten years again less; and in the term 65-74, greater; but for all ages collectively, the duration of policies becoming claims on account of death from this group of diseases, is five months' greater than the average.

In group III, which includes the tubercular diseases, it will be seen, that for all ages under 60, with the exception of the quinquennial term, 40-44, the period elapsed from the date of assuring to the date of death is above the average of the period connected with the deaths from all causes, showing that, for those ages, the deaths of this class, which consist chiefly of phthisis, must be induced by a disease slow in its operation, and in that respect differing from the characteristic of group I. In respect to one term of life, 40-44, the deaths taking place therein, from this group of diseases, have followed very rapidly on the date of the lives being assured, and so remarkably so,

as to reduce the average, at all ages collectively, from this disease, more than one year below the average from all causes. At the term of life 40-44, the period elapsed in the deaths from all causes is 6 years 8 months, but in the group of tubercular diseases, it is only 4 years 8 months; and this would appear to be a true feature of the disease, for the greatest number of deaths have taken place at this term of life; at the other terms of life, when the opposite feature prevails, up till age 60, the result is constantly above the average. On referring to the details of group III, it will be found that these peculiar results are due wholly to the deaths from phthisis, and therefore the preceding observations are strictly applicable to that disease only.

Group IV contains the diseases of the nervous system, and it will be seen that the results do not differ widely from those for all causes; and the same remark applies to the deaths from apoplexy, which form a large proportion of this section.

On referring to group VI, which represents the other disease of the lungs and the organs of respiration, it will be seen that, with the exception of the decennial term of life, 55-64, the deaths take place in a shorter time after the date of assuring than in the average of the deaths from all causes, and in the aggregate of all the ages, the difference is six months. These results are due chiefly to the deaths from pneumonia, which constitute 229 out of the 251 deaths of this group. And it will further be seen, that the deaths from asthma have taken place at a prolonged period beyond the average.

In regard to the diseases enumerated in group VII, it will be found that, on the average, they agree in their results with the deaths from all causes; and that in the different quinquennial terms of life, the results are in some instances above, and in others below, the average.

If attention be now directed to the rate of mortality from the various specified causes given in Table XIII, it will be found that, for all ages taken collectively, the greatest mortality has resulted from zymotic diseases, or those forming group I; and next, tubercular diseases, or group III, which are here separated from the other diseases of the lungs and organs of respiration, which form a distinct class in group VI. The following is an abstract of the results in Table XIII, in so far as concerns the rate of mortality; and it will be observed that the rate of mortality from the zymotic diseases does not differ widely between ages 31-50, but from that age upwards, a rapid and uniform rate of increase takes place:—In group II, including dropsy, cancer, &c., there is a uniform rate of increase from the younger to the older ages. In the class of tubercular diseases, there is not much difference in the rate of mortality from between ages 31-50; but in the next three quinquennial terms of life, there is a gradual increase. In group IV, there will be observed a very great difference between the rate of mortality at the younger and more advanced ages; of the 375 deaths in this group, 274 consist of deaths from apoplexy, and the results are therefore conformable to those already described in connexion with Table XI, preceding. The results of group VI resemble in their relation those in connexion with group III. Group VII, it will be observed, resembles the results of group IV, in having a very low rate of mortality at the earlier ages, and increasing rapidly at the more advanced terms of life.

TABLE XIV.

Ages.	Number of Persons Assured.	All Causes.		I. Zymotic Diseases.		II. Dropsy, Cancer, and other Diseases of uncertain seat.		III. Tubercular Diseases.		IV. Diseases of Brain, Spinal Marrow, Nerves, and Senses.	
		Deaths.	Mortality per Cent.	Deaths.	Mortality per Cent.	Deaths.	Mortality per Cent.	Deaths.	Mortality per Cent.	Deaths.	Mortality per Cent.
15-25...	1,233	4	·324	1	·081	...	...	1	·081	...	...
26-30...	5,595	37	·661	10	·179	2	·036	9	·161	6	·107
31-35...	13,136	113	·860	38	·289	9	·069	38	·289	5	·038
36-40...	20,734	217	1·047	60	·289	13	·087	54	·260	22	·106
41-45...	24,503	279	1·135	64	·261	38	·155	74	·303	29	·118
46-50...	22,507	313	1·394	67	·298	49	·218	66	·293	45	·200
51-55...	18,025	334	1·853	64	·355	46	·255	67	·372	58	·323
56-60...	13,035	363	2·785	66	·506	66	·506	54	·414	63	·483
61-65...	8,324	355	4·265	59	·709	72	·865	49	·589	62	·745
66-70...	4,058	271	6·678	43	1·060	47	1·158	20	·493	53	1·306
71-80...	1,719	181	10·529	29	1·687	33	1·920	5	·291	32	1·862
All Ages	132,869	2,466	1·856	501	·377	380	·286	437	·329	375	·282

Ages.	Number of Persons Assured.	V. Diseases of the Heart and Blood-Vessels.		VI. Diseases of the Lungs and Organs of Respiration.		VII. Diseases of the Stomach, Liver, and other Organs of Digestion.		VIII. Diseases of the Kidneys, &c.		IX. Childbirth, Diseases of the Uterus, &c.	
		Deaths.	Mortality per Cent.	Deaths.	Mortality per Cent.	Deaths.	Mortality per Cent.	Deaths.	Mortality per Cent.	Deaths.	Mortality per Cent.
15-25...	1,233	...	...	2	·162	...	...	...	...	...	...
26-30...	5,595	1	·018	4	·071	1	·018	...	...	...	...
31-35...	13,136	1	·008	9	·069	3	·023	...	...	3	·023
36-40...	20,734	7	·034	26	·125	14	·068	5	·024	...	...
41-45...	24,503	6	·024	29	·118	25	·102	2	·008	...	...
46-50...	22,507	11	·049	28	·124	20	·089	4	·018	5	·022
51-55...	18,025	10	·056	33	·183	26	·144	6	·033	1	·006
56-60...	13,035	19	·146	34	·261	37	·283	3	·023	...	...
61-65...	8,324	12	·144	32	·384	41	·493	10	·120	1	·012
66-70...	4,058	2	·049	39	·961	25	·616	8	·197	...	...
71-80...	1,719	...	...	15	·873	15	·873	2	·116	...	...
All Ages	132,869	69	·052	251	·189	207	·156	40	·030	10	·008

Ages.	Number of Persons Assured.	X. Rheumatism, Diseases of the Bones, &c.		XI. Diseases of the Skin, Cellular Tissues, &c.		XIII. Debility.		XV. Old Age.		XVII. Violence, Privation, Cold, and Intemperance.	
		Deaths.	Mortality per Cent.	Deaths.	Mortality per Cent.	Deaths.	Mortality per Cent.	Deaths.	Mortality per Cent.	Deaths.	Mortality per Cent.
15-25...	1,233	...	...	...	...	...	...	...	...	...	...
26-30...	5,595	1	·018	1	·018	...	...	...	...	2	·036
31-35...	13,136	...	...	...	...	...	...	...	...	7	·053
36-40...	20,734	2	·010	...	...	...	...	...	...	9	·044
41-45...	24,503	1	·004	...	...	...	...	...	...	10	·041
46-50...	22,507	5	·022	1	·004	...	...	...	...	11	·049
51-55...	18,025	2	·010	1	·006	...	...	...	...	16	·089
56-60...	13,035	1	·008	...	...	1	·008	...	...	17	·130
61-65...	8,324	1	·012	1	·012	...	...	6	·072	10	·120
66-70...	4,058	...	...	1	·025	3	·074	24	·591	5	·123
71-80...	1,719	...	...	...	...	...	...	49	2·860	...	...
All Ages	132,869	13	·010	5	·004	4	·003	79	·059	87	·065

The preceding remarks have been made on six only of the principal groups of diseases, and the following still more condensed abstract of the results may be interesting. The Roman numerals represent the diseases as grouped in the preceding table and Table XIII.

Diseases arranged according to the order of their Intensity at the following Ages.

31—35.	36—40.	41—45.	46—50.	51—55.	56—60.	61—65.	66—70.	70—80.
I }	I	III	I	III	I }	II	IV	II
III }	III	I	III	I	II }	IV	II	IV
II }	VI	II	II	IV	IV	I	I	I
VI }	IV	IV }	IV	II	III	III	VI	VI }
IV	II	VI }	VI	VI	VII	VII	VII	VII }
VII	VII	VII	VII	VII	VI	VI	III	III

In the above, as in Table XI, it will be seen that, at the earlier ages, the intensity of the zymotic diseases, and also tubercular disease, is greatest; but at the more advanced, a gradual falling off will be observable in the class of tubercular disease. In the term of life 56-65, tubercular disease stands fourth in the order of intensity, and in the term 66-80, last in order. Again, with respect to class IV, which consists, to a great extent, of deaths from apoplexy, it will be observed that, in the period of life 36-50, it stands fourth in the order of intensity; but that in each of the three succeeding quinquennial terms of life it gradually advances one step in the order of intensity, until, at the term 66-70, it is highest in intensity. This assimilates strictly with the results at page 335, preceding. However, with regard to the class pulmonary diseases, or diseases of the respiratory organs, that not only, in the abstracts just referred to, but in the earlier reports of the Registrar-General, included group III, but also group IV; and if the results be viewed in accordance with this arrangement, the diseases of the respiratory organs will be found to take precedence of all others between ages 31-70, and in the term of life 70-80, they will stand fourth in order.

With the view to show the relative intensity of the various groups of disease at different terms of life amongst different populations, the following abstracts are given from results deduced from facts presented in the reports of the Registrar-General:—

ABSTRACT L.

Mortality of Kent—Males.

Ages.	Causes of Death.							
	All Causes.		I. Zymotic Diseases.		II. Of uncertain or variable seat.		III. Of the Nervous System.	
	Number of Deaths.	Mortality per Cent.	Number of Deaths.	Mortality per Cent.	Number of Deaths.	Mortality per Cent.	Number of Deaths.	Mortality per Cent.
15—19	185	·797	33	·142	18	·078	14	·060
20—24	250	1·165	50	·233	12	·056	14	·065
25—29	198	1·196	32	·193	12	·072	11	·066
30—34	183	1·156	31	·156	13	·082	22	·139
35—39	171	1·368	15	·119	17	·135	18	·143
40—44	174	1·373	26	·205	17	·134	32	·253
45—49	147	1·571	12	·128	23	·246	23	·246
50—54	178	1·845	24	·256	19	·202	22	·234
55—59	148	2·461	12	·200	29	·482	24	·408
60—64	220	3·393	20	·308	44	·679	33	·509
65—69	231	5·558	22	·529	33	·794	44	1·059
70—74	293	8·386	18	·515	46	·831	54	1·546
75—79	228	11·820	18	·933	28	1·452	26	1·348
All Ages	2,607	1·821	313	·219	311	·217	337	·235

Ages.	Causes of Death.							
	IV. Of the Respiratory Organs.		V. Of the Organs of Circulation.		VI. Of the Digestive Organs.		VII. Of the Urinary Organs.	
	Number of Deaths.	Mortality per Cent.	Number of Deaths.	Mortality per Cent.	Number of Deaths.	Mortality per Cent.	Number of Deaths.	Mortality per Cent.
15—19	72	·310	7	·030	7	·030	1	·004
20—24	125	·583	5	·023	12	·056	2	·009
25—29	109	·658	5	·030	12	·072	....	....
30—34	90	·568	7	·044	4	·025	2	·013
35—39	75	·597	9	·072	13	·103	4	·032
40—44	60	·474	9	·071	10	·079	3	·024
45—49	53	·566	6	·064	13	·139	2	·021
50—54	75	·798	9	·096	16	·170	4	·042
55—59	46	·765	13	·216	17	·283	3	·050
60—64	51	·781	18	·278	16	·247	5	·077
65—69	44	1·059	17	·409	24	·577	8	·193
70—74	44	1·259	17	·486	18	·515	12	·343
75—79	25	1·296	4	·207	8	·415	7	·363
All Ages	869	·607	126	·088	170	·119	53	·037

ABSTRACT L.—Continued.

Ages.	Causes of Death.									
	VIII. Of the Organs of Generation.		IX. Of the Organs of Locomotion.		X. Of the Integumentary System.		XI. Old Age.		XII. External Causes, Poisoning, As- phyxical Injuries	
	Num- ber of Deaths	Mor- tality per Cent.	Num- ber of Deaths	Mor- tality per Cent.	Number of Deaths.	Mor- tality per Cent.	Number of Deaths.	Mor- tality per Cent.	Number of Deaths.	Mor- tality per Cent.
15—19	....	....	6	·026	1	·004	....	....	26	·112
20—24	....	....	7	·033	3	·014	....	....	20	·093
25—29	....	....	2	·012	....	....	....	....	15	·091
30—34	....	....	1	·006	....	....	....	....	13	·082
35—39	....	....	2	·016	2	·016	....	....	17	·135
40—44	....	....	2	·016	....	....	....	....	15	·118
45—49	....	....	3	·032	....	....	....	....	12	·128
50—54	....	....	2	·021	....	....	....	....	7	·075
55—59	....	....	1	·017	....	....	....	....	3	·050
60—64	1	·015	2	·031	1	·015	20	·308	9	·139
65—69	1	·024	....	....	2	·048	31	·312	5	·151
70—74	2	·057	1	·029	1	·029	77	2·204	3	·086
75—79	1	·052	1	·052	1	·052	106	5·495	3	·156
All Ages	5	·003	30	·021	11	·008	234	·163	148	·010

ABSTRACT M.

Twenty-Four Town Districts of England—Males.

Ages.	Male Popula- tion.	All Causes.		Zymotic, Endemic, and Contagious Diseases.		Diseases of uncertain or variable seat.		Diseases of the Nervous System.	
		Deaths.	Mortality per Cent.	Deaths.	Mortality per Cent.	Deaths.	Mortality per Cent.	Deaths.	Mortality per Cent.
15—20...	83,707	758	·905	138	·165	61	·073	40	·048
20—30...	161,585	1,756	1·087	270	·167	112	·069	71	·044
30—40...	123,104	1,804	1·465	225	·183	159	·129	132	·107
40—50...	83,442	1,786	2·140	216	·259	202	·242	148	·177
50—60...	47,648	1,526	3·203	121	·254	213	·447	162	·340
60—70...	27,577	1,598	5·795	100	·363	221	·801	189	·685
70—80...	10,555	1,291	12·231	50	·474	123	1·165	110	1·042
	537,618	10,519	1·957	1,120	·208	1,091	·203	852	·158

Ages.	Male Popula- tion.	Diseases of the Respiratory Organs.		Diseases of the Organs of Circulation.		Diseases of the Digestive Organs.		Diseases of the Urinary Organs.	
		Deaths.	Mortality per Cent.	Deaths.	Mortality per Cent.	Deaths.	Mortality per Cent.	Deaths.	Mortality per Cent.
15—20...	83,707	322	·385	24	·029	37	·044	1	·001
20—30...	161,585	957	·592	39	·024	63	·039	11	·068
30—40...	123,104	897	·729	49	·040	163	·084	16	·013
40—50...	83,442	825	·989	60	·072	119	·143	22	·026
50—60...	47,648	654	1·373	61	·128	121	·254	19	·010
60—70...	27,577	545	1·976	63	·228	105	·381	29	·105
70—80...	10,555	225	2·132	20	·189	48	·455	31	·294
	537,618	4,425	·823	316	·059	596	·111	129	·024

ABSTRACT M.—Continued.

Ages.	Male Population.	Diseases of the Organs of Generation.		Diseases of the Organs of Locomotion.		Diseases of the Integumentary System.		Old Age.		External Causes, Poisoning, Asphyxical Injuries.	
		Deaths.	Mortality per Cent.	Deaths.	Mortality per Cent.	Deaths.	Mortality per Cent.	Deaths.	Mortality per Cent.	Deaths.	Mortality per Cent.
15—20...	83,707	...	...	14	·017	2	·002	...	...	111	·133
20—30...	161,585	1	·001	20	·012	...	...	...	...	195	·121
30—40...	123,104	2	·002	25	·020	8	·006	...	...	180	·146
40—50...	83,442	...	...	13	·016	9	·011	...	...	153	·183
50—60...	47,648	...	...	25	·052	6	·013	27	·057	97	·204
60—70...	27,577	1	·004	18	·065	10	·036	230	·834	61	·221
70—80...	10,555	...	...	6	·057	3	·028	642	5·944	24	·227
	537,618	4	·001	121	·023	38	·007	899	·017	821	·015

ABSTRACT N.

Mortality of the Metropolis—Males.

CAUSES OF DEATH.	Ages.							
	15—19.	20—29.	30—39.	40—49.	50—59.	60—69.	70—79.	All.
	Mortality per Cent.							
All Causes.....	·161	·900	1·361	1·967	3·105	4·850	7·448	2·004
I. Zymotic Diseases	·023	·095	·089	·119	·171	·177	·380	·131
SPORADIC DISEASES.								
II. Of uncertain, or variable seat	·015	·067	·163	·270	·537	·818	1·258	·293
III. Of the Nervous System	·008	·045	·120	·237	·039	·600	·892	·215
IV. Of the Respiratory Organs	·072	·543	·689	·962	1·357	1·589	1·268	·809
V. Of the Organs of Circulation	·004	·031	·062	·085	·138	·253	·195	·082
VI. Of the Digestive Organs	·011	·032	·059	·118	·234	·319	·224	·112
VII. Of the Urinary Organs	·001	·006	·017	·039	·088	·170	·181	·045
VIII. Of the Organs of Generation.....	....	....	....	....	....	....	·104	·0002
IX. Of the Organs of Locomotion	·003	·010	·018	·014	·019	·038	·024	·017
X. Of the Integumentary System .....	....	·001	·001	·004	·005	·020	·020	·004
XI. Old Age .....	....	....	....	....	·023	·704	2·847	·191
XII. External causes—Poisoning, Asphyxia, Injuries	·025	·066	·083	·119	·145	·131	·156	·104

With respect to the results in connexion with these abstracts, it may be sufficient to refer to those in connexion with the term of life 41-50; and in so far as concerns the group of zymotic and sporadic diseases, it is obvious that the intensity of mortality is higher in the Gotha Life Office than in any of the other classes of facts brought

forward; but in regard to group II, which includes dropsy, cancer, and diseases of uncertain seat, the opposite result is observable, the mortality being less in the Gotha Life Office than in any of the other class of facts now under observation; but in respect to the diseases of the respiratory organs, the results for the same ages are very remarkable and important, being for the four different class of facts, as follows, viz. :—

Gotha Life Office.....	·419 per cent.
Division of East Kent.....	·520 „
Metropolis	·962 „
Twenty-four Towns.....	·989 „

The immunity from this class of diseases in the Gotha Life Office, and also in the division of East Kent, is remarkable, when placed in contrast with the other figures. Similar remarks are applicable to the two other classes of diseases contained in the following condensed abstract of figures presented in the preceding abstracts :—

Group of Diseases, classified as in Table XIII.	Results per Cent.—Ages 41-50—for the different Classes of Disease in the			
	Gotha Life Office.	Division of East Kent.	Metropolis.	Twenty-Four Towns.
I	·279	·166	·119	·259
II	·186	·190	·270	·242
III + VI....	·419	·520	·962	·989
IV	·159	·299	·237	·177
VII	·095	·109	·118	·143

The differences for other terms of life will be easily discovered from an examination of the various abstracts.

With respect to the deaths which have taken place from Asiatic cholera, it will be seen, from Abstract H, that 12 deaths took place from that cause in the ten years 1829-38, 17 in the ten years 1839-48, and 31 in the year 1849. In Table XI, it will be seen that, although the greatest number of deaths happened in the decennial term of life, 41-50, still the highest rate of mortality from this disease was at ages 61-70; and if the results for the whole 21 years, as set forth in Table XIII, be considered, in reference to age, it will be seen that the largest number of deaths have taken place between ages 51-60 but the rate of mortality has gone on increasing from the youngest to the oldest age, as will be seen by the following abstract :—

Ages.	Lives Exposed to Risk.	Deaths from Cholera.	Mortality per Cent.	Being One Death
31—40.....	33,870	7	·021	4,762
41—50.....	47,010	15	·032	3,125
51—60.....	31,050	18	·058	1,724
61—70.....	12,382	17	·137	730
71—80.....	1,719	3	·175	571
Total.....	126,031	60	·048	2,083

A similar law has always been observed elsewhere, although within epidemic periods the mortality must of course be greater than shown in the above table. A few deaths have taken place at intervals throughout the whole period; but if the year of the principal epidemic be considered, namely, 1849, the rate of mortality will appear much increased :—

Ages.	Lives Exposed to Risk.	Deaths from Cholera.	Mortality per Cent.	Being One Death in
31—40.....	3,565	3	·084	1,188
41—50.....	5,766	3	·052	1,922
51—60.....	3,060	10	·327	306
61—70.....	1,653	12	·726	138
70—80.....	341	3	·880	114
Total.....	14,385	31	·215	464

This will be found to be much under the rate of mortality from cholera in Paris and many other places during the year 1832, for all ages taken collectively, the result being one in 42·7 for Paris, but one in 464 in the Gotha Life Office, for ages 31-80. The influence of age is very remarkable in modifying the mortality from this disease. The following are the results for all ages in Paris, showing the mortality from cholera from the 26th March to 30th September, in the year 1832 :—

Ages.	Population.	Deaths from Cholera.	Mortality per Cent.	Being One in
0— 5	53,124	1,311	2·468	41
5— 10	50,059	392	·783	153
10— 15	54,696	202	·369	271
15— 20	79,058	377	·477	210
20— 25	82,044	959	1·169	86
25— 30	75,836	1,206	1·590	63
30— 40	125,188	2,771	2·213	45
40— 50	97,526	3,727	2·796	36
50— 60	81,415	2,913	3·577	28
60— 70	58,625	3,121	5·324	19
70— 80	23,262	2,044	8·787	11
80— 90	4,715	365	7·741	13
90—100	314	14	4·458	22
Totals.....	785,862	18,402	2·342	42·7

The following is the rate of mortality from cholera, at corresponding ages, in the Gotha Life Office, Paris and London :—

Ages.	Gotha Life Office, 1849.		Paris, 1832.		London, 1849.	
	Per Cent.	One in	Per Cent.	One in	Per Cent.	One in
31—40.....	·084	1,186	2·213	45	·661	151
41—50.....	·052	1,922	2·796	36	·830	120
51—60.....	·327	306	3·577	28	1·243	80
61—70.....	·726	138	5·324	19	1·726	58
71—80.....	·880	114	8·787	11	2·182	46
Total.....	·215	464	3·776	26	·962	104

Hence the mortality within the ages 31-80, is 1 in 464, while in Paris it was 1 in 26, and in London 1 in 104. The differences for each of the decennial periods of life are also shown.

Abstract H., Table XI, and Table XIII, will show the mortality from violent causes. In the ten years, 1829-38, 11 deaths took place from suicide; in the twenty years, 1829-48, 64 deaths from the same cause; 39 of these deaths took place between ages 41-60. During the twenty-one years, 1829-49, 87 deaths took place from violent causes of all kinds, and an inspection of Section XVII will show the influence of age on the rate of mortality from these causes, and it will be found that with but slight irregularities, which appear to be due chiefly to small numbers, there is a gradual rate of increase from the younger to the older ages. In England and Wales, the deaths from violence, within the above ages, are 1 in 19; in the Equitable Life Office, 1 in 54; and in the Scottish Widows' Fund, 1 in 35; and in the Gotha Life Office, 1 in 28 of the total deaths, within the same term of life.

Allusion has just been made to the mortality in the Scottish Widows' Fund and Life Assurance Society. In the "Monthly Journal of Medical Science" for January 1847, will be found a most interesting paper, by James Begbie, M.D., Consulting Physician to the Society, on the Mortality of the Members. This is the only published document of any importance which gives the mortality from different causes amongst assured lives. The nosological arrangement of the return by the Equitable Society being so defective as to render the results of little or no practical value.

The facts brought under consideration by Dr. Begbie include the experience of the "Scottish Widows' Fund" for the years 1815-45, in which 642 deaths took place among 5,989 persons, of whom 447 were females; but it is important to observe that all those persons whose policies were either surrendered or forfeited are not included in the preceding numbers, so that the full number of persons exposed to the risk of mortality in the Society, during the thirty-one years above referred to, is not given. There is another element of importance wanting in Dr. Begbie's paper. While the ages at death from different causes are furnished, the population for those ages, or the number of persons exposed to the risk of mortality at the corresponding terms of life has not been given; it is greatly to be regretted that such is the case, for it deprives his paper of one of its most important uses. However this defect might to some extent have been supplied from

the distribution of ages in the Gotha Life Office, which cannot differ in any very marked manner from those in the Scottish Widows' Fund, had the gross numbers exposed to the risk of mortality also been given, and the surrendered and forfeited policies not been excluded. Notwithstanding these deficiencies, which will render a strict comparison with the results of the Gotha Life Office impossible, Dr. Begbie's paper is still full of interest, and should be studied by every one connected with the management of Life Offices, or giving attention to the more general question of Vital Statistics. It will be impossible within the limits assigned to the present contribution to do justice to the discussion into which Dr. Begbie enters on the results of his investigation, and those who desire to follow him in those important details, must have recourse to the paper itself. The following exhibits the deaths from different causes, for all ages collectively, in the Gotha Life Office, and in the Scottish Widows' Fund Life Assurance Society.

ABSTRACT O.

CAUSE OF DEATH.	Gotha Life Office.		Scottish Widows' Fund.	
	No.	Per Centage to Total Deaths.	No.	Per Centage to Total Deaths.
Epidemic and Contagious Diseases	503	20.356	93	14.486
Diseases of uncertain seat	380	15.378	52	8.100
Diseases of the Brain and Nerves	375	15.176	133	20.720
Diseases of the Respiratory Organs.....	688	27.843	152	23.676
Diseases of the Heart and Blood-Vessels.....	69	2.792	53	8.255
Diseases of the Organs of Digestion	207	8.377	77	11.994
Diseases of the Urinary Organs	40	1.619	23	3.582
Childbirth and Diseases of the Uterus, &c.....	10	.405	5	.779
Diseases of the Joints	18	.729	3	.467
Violent Deaths	87	3.521	18	2.803
Old Age.....	86	3.480	6	.934
Causes not specified	8	.324	27	4.204
Total deaths.....	2,471	100.000	642	100.000

In the above abstract the relation of the two classes of facts is obvious, and calls for no further commentary, but it may be useful to give the results for each class of disease in the Scottish Widows' Fund according to age.

ABSTRACT P.

DISEASE.	Ages at Death.							Total.
	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	Above 80.	
Epidemic and Contagious Diseases	5	15	28	18	22	4	1	93
Diseases of uncertain seat	2	4	7	15	14	9	1	52
Diseases of the Brain and Nerves	5	14	36	34	29	14	1	133
Diseases of the Respiratory Organs	12	45	32	28	22	11	2	152
Diseases of the Heart and Blood-Vessels	....	9	11	15	13	3	2	53
Diseases of the Organs of Digestion	3	13	17	21	17	6	....	77
Diseases of the Urinary Organs	....	2	2	6	4	8	1	23
Childbirth and Diseases of the Uterus, &c.	....	2	3	....	....	....	....	5
Diseases of the Joints	....	1	....	1	1	....	....	3
Violent Deaths	1	4	7	5	1	....	....	18
Old Age	....	....	....	....	....	2	4	6
Causes not specified or ascertained	....	....	....	....	....	....	....	27
All Diseases	28	109	143	143	123	57	12	642

It now only remains to direct attention to Tables XV and XVI, the former of which shows the progress of the Gotha Society, from 1829 to the end of the year 1849, and the latter shows the number and amount of subsisting assurances at the end of the year 1848.

TABLE XV.

Number of Persons effecting Assurances during the Years 1829-49.

Year.	Number of Persons making new Proposals.	Number of Persons effecting new Policies.	Gross number of Persons Assured throughout the Year.	Persons on whose lives Policies were discontinued.			Persons on whose lives Policies were in force at the end of the Year.	Increase in the Year.	Average Age of the Assured.	
				Lapses.	Deaths.	Total.			Years.	Mths.
1829...	1,581	1,285	1,285	...	12	12	1,273	1,273	42	7
1830...	607	504	1,777	14	16	30	1,747	474	42	9
1831...	1,491	1,244	2,991	46	27	73	2,918	1,171	41	10
1832...	1,574	1,165	4,083	214	53	267	3,816	898	42	44
1833...	1,351	1,041	4,857	120	46	166	4,691	875	42	9
1834...	1,218	902	5,593	156	65	221	5,372	681	43	1
1835...	1,318	999	6,361	156	85	241	6,120	748	43	3½
1836...	1,635	1,213	7,333	172	108	280	7,053	933	43	5
1837...	1,581	1,151	8,204	174	123	297	7,907	854	43	8
1838...	1,555	1,154	9,061	155	124	282	8,779	872	44	...
1839...	1,419	1,024	9,802	199	123	322	9,481	702	44	4½
1840...	1,485	1,089	10,570	200	136	336	10,234	753	44	8½
1841...	1,414	983	11,217	184	158	342	10,875	641	45	1
1842...	1,352	1,013	11,888	174	191	365	11,523	648	45	5
1843...	1,503	1,049	12,572	195	201	396	12,176	653	45	10
1844...	1,493	1,073	13,249	186	197	383	12,866	690	46	...
1845...	1,412	1,018	13,884	181	235	416	13,468	602	46	4
1846...	1,454	1,096	14,564	214	224	438	14,126	658	46	7
1847...	1,706	1,335	15,361	244	259	503	14,828	702	46	10
1848...	1,151	824	15,652	291	325	616	15,036	208	47	4
1849...	1,377	1,011	16,047	239	337	576	15,471	435	47	9
Total	29,707	22,063	196,352	3,517	3,075	6,592		15,471		

The above will not correspond exactly in some of its details, particularly in relation to the number of deaths, with some of the preceding figures; in fact Table XV is a financial statement of the Society, and those conversant with the practical working of such institutions, will immediately understand the cause of such differences. The number of deaths which have actually taken place up to any given date being of necessity, in every large Society, greater than the payments made on account of deaths to the same date.

In the preceding table there is one feature of an unusual character, and of much practical importance to Life Offices, the ratio of lapsed policies to the gross number of policies effected. It will be seen that out of 22,063 persons whose lives were assured, the policies on the lives of 3,517 were either surrendered, forfeited, or had expired, being about 16 per cent. of the whole. To those not familiar with the experience of Life Offices in this respect, the proportion may seem high, but it is very much below that of Life Offices in this country, and merits serious consideration on the part of those transacting assurance business on the Continent.

The following abstract will show the results for the Gotha Life Office, the Equitable Society of London, and the fifteen Life Offices reported on in 1843 by the Committee of Actuaries.

ABSTRACT Q.

Source of Data.	Date of Experience.	Entrants.	Existing at the termination of Experience.		Discontinued.		Died.	
			Num-ber.	Per Centage to Entrants.	Num-ber.	Per Centage to Entrants.	Num-ber.	Per Centage to Entrants.
Equitable Life Office	{ 1762-1829, being 68 years .. }	21,398	6,980	32.4	9,324	43.6	5,144	24.0
Fifteen Life Offices	{ 1773-1838, but chiefly from 1810-38, being 29 years .. }	40,616	25,462	62.7	11,226	27.6	3,928	9.7
Gotha Life Office ...	{ 1829-49, being 21 years .. }	22,063	15,471	70.1	3,517	16.0	3,075	13.9
Combined results	.....	84,077	47,863	56.9	34,067	28.7	12,147	14.4

It is hence obvious that while the number of discontinued policies, being policies which have ceased to exist from all causes except death, is only about 16 per cent. of the original number of entrants in the Gotha Life Office, the ratio is as high as 43.6 per cent. in the Equitable, and even 27.6 per cent. in the Fifteen Life Offices. It is to be regretted that the causes of discontinuance of the policies in each of those groups are unknown, but there is such a disparity in the results, that there can be very little doubt that a greater proportion of the policies issued on the Continent are kept in force for prudential reasons or family provisions, and that whether the increased ratio of discontinued policies in this country results from a greater proportion being originally effected for a temporary period only, still it is evident from the fact of a less proportion of them being kept in force, that the prudential feelings among the assuring classes in Germany must be stronger than in this country.

The figures in the last column of Abstract Q, when viewed by themselves, can convey but little information, as the results are not derived from the number exposed to the risk of mortality, but from the original number of entrants, and consequently the rate of mortality will depend on the ratio of discontinued policies, and the ages of the persons exposed to the risk of mortality.

In the following abstract will be found the mortality per cent., without distinction of age, and the average duration of the assurances in each group of facts.

ABSTRACT R.

Data.	Exposed to Risk.	Deaths.	Mortality per Cent.	Entrants.	Average Duration of each Policy.
Equitable	266,872	5,144	1.9	21,398	12.5 years
Fifteen Offices	220,787	3,928	1.8	40,616	5.4 „
Gotha Life Office	179,884	3,075	1.7	22,063	8.1 „
Total.....	667,543	12,147	1.8	84,077	7.9 „

The greater age of the Equitable Life Office destroys the value of any comparison between the results derived from the experience of that Society and either of the other sources of data, but a comparison may fairly be made between the results for the Fifteen Life Offices and the Gotha Life Office. Fourteen of these Offices had on an average been established for eighteen years up to the close of the experience here brought under review, and if the eldest office of the fifteen be included, the average duration of the term over which their transactions extend will not differ widely from that of the Gotha Life Office. This much being explained, it is certainly a very remarkable fact that the average duration of each policy effected in the English Life Offices should be under five and a half years, and exceed the period of eight years in the Gotha Life Office. It is stated in the report by the Committee of Actuaries that, taking the whole of the data which they had under investigation, and which includes the above fifteen offices, and also the Equitable and Amicable Life Offices, the two oldest in existence, that the average duration of all the policies is under eight years and a half. It is therefore evident that the interests of a Life Office, and particularly so in this country, are influenced by a great many other causes than simply the law of mortality prevailing among its members, and there is reason to believe that those disturbing causes will increase in intensity with the increased age and experience of the offices, and the gradual extension of the practice of Life Assurance among the population of this country.

In the following table will be found a statement of the number of subsisting assurances in the Gotha Life Office, on the 31st of December, 1848; to many persons the results may be interesting. The amounts assured are expressed in thalers, or rixdollar Prussian current, each being worth nearly three shillings sterling.

TABLE XVI.
Assurances subsisting in 1848.

Ages.	Persons.										Total.
	200—1,000 Thlr.	1,100—2,000 "	2,100—3,000 "	3,100—4,000 "	4,100—5,000 "	5,100—6,000 "	6,100—7,000 "	7,100—8,000 "	8,100—9,000 "	9,100—10,000 "	
15—20...	4	...	...	...	...	...	...	...	...	...	4 Persons 3,500 Thlr.
21—25...	77	7	1	...	2	...	...	...	...	...	87 " 67,800 "
26—30...	391	73	20	8	10	3	3	3	...	9	522 " 692,200 "
31—35...	882	241	71	36	34	20	3	7	2	12	1,308 " 1,888,900 "
36—40...	1,412	387	127	64	55	23	4	14	1	22	2,109 " 3,077,600 "
41—45...	1,759	585	178	109	69	45	5	19	2	27	2,798 " 4,307,100 "
46—50...	1,628	618	199	146	70	37	13	35	1	29	2,776 " 4,614,000 "
51—55...	1,246	478	174	94	64	41	8	19	2	21	2,147 " 3,562,000 "
56—60...	843	334	118	98	69	43	7	15	3	15	1,545 " 2,813,400 "
61—65...	549	217	83	60	29	21	10	15	...	6	990 " 1,750,500 "
66—70...	279	111	32	20	19	14	4	8	...	1	489 " 842,200 "
71—75...	133	37	16	15	5	3	...	2	...	1	212 " 327,700 "
76—84...	30	15	...	1	1	1	1	...	...	...	49 " 64,800 "
Total.	9,233 Persons 6-611,100 Thlr.	3,103 " 5-337,900 "	1,019 " 2-880,100 "	651 " 2-534,200 "	427 " 2-112,600 "	251 " 1-499,100 "	58 " 396,200 "	137 " 1-089,000 "	14 " 121,500 "	143 " 1-439,500 "	15,036 Persons 2-4,011,200 Thlr.

The discussion of the varied subjects brought forward in this paper it is hoped will induce others to follow up the different inquiries into a more complete analysis, and thereby advance the science which it is the object of this section to promote.

On the self-imposed Taxation of the Working Classes in the United Kingdom. By G. R. PORTER, Esq., F.R.S.

[Read before the Statistical Section of the British Association, August, 1850.]

THERE is a species of taxation for the investigating of which we shall not be charged with entering upon forbidden ground. It bears heavily upon the personal resources of the people, who yet are never found to complain of its pressure; and, unlike the taxes which form the subject of so many and such grievous lamentations, it forms a measure of the prosperity of the people, since both will uniformly diminish or increase together; and indeed, the amount of the burthen in question is, when greatest, the best proof that can be offered of the ability of the com-